

## RESEARCHES REGARDING THE SAMPLE INCIDENCE OF THE MAIN BIRD'S – FOOT TREFOIL PEST (*Odontothrips loti* Hal.) IN THE CONDITIONS OF S.D. TIMISOARA

Ana – Maria VÎRTEIU, Ioana GROZEA, Ramona ȘTEF, Alin CĂRĂBET, Mihaela FERICEAN

Banat's University of Agricultural Sciences and Veterinary Medicine, Faculty of Agricultural Sciences, Timisoara, Aradului Street, no. 119, RO-300645, Romania, Corresponding author: [anamaria.badea@gmail.com](mailto:anamaria.badea@gmail.com)

**Abstract:** *Lotus corniculatus* has a great capability of autoinsemination, even in the conditions of a long time depasturage. Concurrently, the rusticity assures great qualities to *Lotus corniculatus*, compared to the other leguminouses such as, the lack of meteorisations production during the consumption under green table shape (Zamfirescu, 1965). The entomofauna knowledge of this crop plants represents one of the most important stages in obtaining an integrated protection for a production of high quality and large quantity. The purpose of the paper is to establish the main pests of the crop and the sample incidence of the bird's – foot trefoil thrips. For carrying out the investigations the experimental field was placed at the Didactical Station Timisoara, during the period 2008 - 2009. The experimental field for studying the main pest (*Lotus corniculatus*), damaged by the *Lotus corniculatus* was placed after the standard method of location of the experiments, in three repetitions every lot having a length of 2 m and a latitude of 1 m. In studying the *Lotus corniculatus* thrips biology (*Odontothrips loti* Hal.) the samples collecting was made during a period of 20 days, with a collecting periodicity at every 48 hours. In the year 2008, the highest number of *Odontothrips loti* Hal. adults was identified in 30 June in the middle period of the observation, being in average of 21,76 insects/sample. The smallest larvae number was collected in the last decade of June month, being in average of 14,54 insects/ sample. In the year 2009 the highest number of *Odontothrips loti* Hal. adults was identified in the first decade of July, being in average of 19,19 insects/ sample. The highest larvae number was collected in the first decade of July month, being in average of 14,28 insects/ sample.

**Key words:** incidence, bird's – foot trefoil, pest, thrips

### INTRODUCTION

The *Lotus corniculatus* importance as a green crop consist in the fact that it could change the Lucerne and clover from some of the regions fewer auspicious of the crop. From this point of view, the opinion of many explorers is unanimous, so that the *Lotus corniculatus* is a leguminous with the greatest adaptability at the distinct weather conditions and soil: drought, high humidity, acid or superficial soils, salts or with a low fertility, stubbed fields etc (DRAGOMIR, 1981; WINCH ȘI MACDONALD, 1961, LASKEY ȘI WAKEFIELD, 1978; VARGA, 1998).

The *Lotus corniculatus* has a great capability of autoinsemination, even in the conditions of a depasturage of a long time. Concurrently, the rusticity assures great qualities to the *Lotus corniculatus*, comparative with the other leguminouses such as, the lack of meteorisations production during the consumption under green table shape (ZAMFIRESCU, 1965).

The paper purpose is to bring contributions to the investigations concerning the incidence in samples and of *Odontothrips loti* Hal. populations evolution

Through realizing those objectives is followed the ensurance of an efficient protection of the *Lotus corniculatus* crop in obtaining a seed production of superior quality and a great quantity.

### MATERIAL AND METHOD

In realizing the investigations the experimental field was placed at the Didactical Station Timisoara, in the period 2008 – 2009.

The experimental fields in realizing the ecological and biological investigations was placed after the standard method of location of the experiences, every lot had the length of 2 m and a latitude of 1 m. In identifying all the larvae stages was constructed an ironwork and every lot was secluded with a catch mull. Also it was a distance of 4 m among the repetitions (CIULCA, 2002).

In studying the *Lotus corniculatus* thrips biology (*Odontothrips loti* Hal.) the samples collecting was made during a period of 20 days, with a collecting periodicity at every 48 hours.

The controlled insects from the experimental field were determined in the Entomology Laboratory of Agricultural Sciences and Veterinary Medicine of Banat Timisoara with the help of specialized papers and determinations.

### RESULTS AND DISCUSSIONS

Bird's – foot trefoil entomofauna structure the important pest was *Odontothrips loti* Hal. The attack produced by the larvae and adults diminished in a great measure the seed production. In consequence is necessary the knowledge in the first way of the incidence in the samples of the pest (BADEA, 2007, 2008 a, b); (BAILEY, 1957).

Table 1

The *Odontothrips loti* Hal. adults collected from S.D.Timisoara experimental field in the year 2008

Collecting data	Number of <i>Odontothrips loti</i> Hal. - adults			Total number	Average
	R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>		
16.06.2008	2	15	3	20	6,66
18.06.2008	8	42	12	62	20,66
20.06.2008	11	25	15	51	17
22.06.2008	16	45	18	79	26,33
24.06.2008	12	45	18	75	25
26.06.2008	9	38	13	60	20
28.06.2008	13	36	21	70	23,33
30.06.2008	18	47	23	88	29,33
02.07.2008	14	45	19	78	26
04.07.2008	13	34	19	66	22
06.07.2008	15	37	17	69	23
<b>Media =21,76</b>					

From the investigations made in the year 2008 on *Odontothrips loti* Hal. adults it was observed a constant presence of the bird'd – foot trefoil thrips in the samples (table 6.11.). Thus, during period 16.06-06.07. in average the reduced number of samples was registered in 16.06., afterwards was registered an obvious increasing in the date of 30.06. when it were collected in average 29.33 adults. Towards the end of the observation period was determined a gradual decreasing of the adults incidence in the samples. The average of 21.76 adults/sample emphasized the pest importance thanks to its incidence during the all period of observation.

From the effected investigations in the year 2008 on *Odontothrips loti* Hal. larvae was observed that in the period 16.06.-06.07 the most reduced number of samples registered in the date of 22.06., and the most high number of samples, registered in the date of 30.06.2008

(table 6.12.). The medium number of samples oscillated between 8,33 and 20,66, being in average 14,54.

Table 2

The *Odontothrips loti* Hal. larvae collected from S.D.Timişoara experimental field in the year 2008

Collecting data	Number of <i>Odontothrips loti</i> Hal. – larvae			Total number	Average
	R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>		
16.06.2008	18	5	21	44	14,66
18.06.2008	3	21	10	34	11,33
20.06.2008	28	11	8	47	15,66
22.06.2008	12	8	5	25	8,33
24.06.2008	4	17	8	29	9,66
26.06.2008	2	15	12	29	9,66
28.06.2008	11	16	21	48	16
30.06.2008	19	27	16	62	20,66
02.07.2008	3	35	14	52	17,33
04.07.2008	32	18	6	56	18,66
06.07.2008	29	12	13	54	18
<b>Media = 14,54</b>					

From the obtained data it observed that an average of 14.54 larva/samples, and a number of 21.76 adults/sample underlined once again the pest importance thanks to it high incidence also in the year 2008 in samples.

From the obtained investigations in the year 2009 on *Odontothrips loti* Hal. adults was observed that those were met in a constant relative number (table 6.13.). Thus, in the period 22.06-14.07., the lowest number of samples was in the date of 02.07. and 14.07., and the highest was in 08.07. The average number of adults collected in the period 09.06- 03.06., oscillated between 16,66 and 23,33, with an average of 19,19 adults/sample.

Table 3

The *Odontothrips loti* Hal. adults collected from S.D.Timişoara experimental field in the year 2009

Collecting data	Number of <i>Odontothrips loti</i> Hal. - adults			Total number	Average
	R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>		
22.06.2009	8	17	33	58	19,33
24.06.2009	13	26	11	50	16,66
26.06.2009	28	12	14	54	18
28.06.2009	8	11	39	58	19,33
30.06.2009	11	35	16	62	20,66
02.07.2009	19	30	6	55	18,33
04.07.2009	20	14	26	60	20
06.07.2009	33	10	9	52	17,33
08.07.2009	36	6	28	70	23,33
10.07.2009	15	29	16	60	20
12.07.2009	15	26	21	62	20,66
14.07.2009	9	15	26	50	16,66
<b>Media = 19,19</b>					

Comparative with the year 2008, when it was registered an average of 21,76 adults/sample, it was observed a decreasing of the medium number of adults with 2,57 adults/sample.

Table 4

The *Odontothrips loti* Hal. larvae collected from S.D.Timișoara experimental field in the year 2009

Collecting data	Number of <i>Odontothrips loti</i> Hal. - larvae			Total number	Average
	R <sub>1</sub>	R <sub>2</sub>	R <sub>3</sub>		
22.06.2009	5	4	28	37	12,33
24.06.2009	15	3	3	21	7
26.06.2009	11	15	17	43	14,33
28.06.2009	9	13	11	33	11
30.06.2009	4	13	18	35	11,66
02.07.2009	12	11	17	40	13,33
04.07.2009	10	14	19	43	14,33
06.07.2009	18	24	20	62	20,66
08.07.2009	19	28	10	57	19
10.07.2009	15	13	15	43	14,33
12.07.2009	29	7	19	55	18,33
14.07.2009	12	18	15	45	15
<b>Media =14,28</b>					

From the effected investigations on *Odontothrips loti* Hal. larvae these ones presented the lowest number of samples in the date of 24.06. and the highest in 06.07. The average number of collected larvae in the period 22.06.-14.07., oscillated between 7 and 20,66 with an average of 14,28 larva/sample (table 6.14.). Comparative with the year 2008, when it was registered an average of 14,54 larvae/sample, it observed an insignificant decreasing of the larva number.

The high relative values of the incidence in samples and also the presence in a constant way of *Odontothrips loti* Hal. larvae and adults, in totality of collected samples from S.D.Timișoara during two years, it emphasized the economical importance of the pest and its major role in diminishing the seed quantity of fingers-and-thumbs and its quality depreciation.

### CONCLUSIONS

In the year 2008, the highest number of *Odontothrips loti* Hal. adults was identified in 30 June in the middle period of the observation, being in average of 21,76 insects/ sample.

The smallest larvae number was collected in the last decade of June month, being in average of 14,54 insects/ sample.

In the year 2009 the highest number of *Odontothrips loti* Hal. adults was identified in the first decade of July, being in average of 19,19 insects/ sample.

The highest larvae number was collected in the first decade of July month, being in average of 14,28 insects/ sample.

Comparative with the year 2008, when it was registered an average of 21,76 adults/sample, in the year 2009 it was observed a decreasing of the medium number of adults with 2,57 adults/sample.

Comparative with the year 2008, when it was registered an average of 14,54 larvae/sample, in the year 2009 it observed an insignificant decreasing of the larva number.

The total number of adults collected during two years, it emphasized the economical importance of the pest and its major role in diminishing the seed quantity of bird's – foot trefoi and its quality depreciation.

#### BIBLIOGRAPHY

1. BADEA ANA – MARIA, I. PĂLĂGEȘIU, IOANA GROZEA, 2007 - The dynamics of the birds – foot trefoil thrips (*Odontothrips loti* Hal.) populations in the conditions of the S.D. Timișoara, Zilele academice timișene, Lucr. Șt. Fac. Agric., Vol. XXXIX, U.S.A.M.V.B. Timișoara, Ed. Agroprint Timișoara, 449 – 454
2. BADEA ANA – MARIA, 2008 a – Cercetări privind insectele daunatoare ghizdeiului (*Lotus corniculatus* L.) din Banat, USAMVB Timișoara, teza de doctorat
3. BADEA ANA – MARIA, IOAN PALAGESIU, 2008 b - Insecte daunatoare ghizdeiului, Ed. Waldpress, Timișoara
4. BAILEY S.F., 1957 – The thrips of California, part I: Suborder *Terebrantia*, Bull. Of the California Insect survey, vol 4, no. 5, 143 – 220
5. CIULCĂ S., 2002 – Tehnică experimentală, Ed. Mirton, Timișoara
6. DRAGOMIR N., 1981 – Cercetări privind biologia, genetica și ameliorarea ghizdeiului (*Lotus corniculatus* L.), I.A. Cluj – Napoca (teză de doctorat)
7. LASKEY G. B., WAKEFIELD B. C., 1978 – Agronomy J., vol. 70, nr. 1, pag. 146 – 148
8. VARGA P., MOISUC AL., SAVATTI M., SCHITEA MARIA, OLARU C., DRAGOMIR N., SAVATTI M. JR., 1998 – Ameliorarea plantelor furajere și producerea semințelor, Ed. Lumina, România
9. WINCH J. E., MACDONALD H. A., 1961 – Canad. J. Plant. Sci., vol. 41, pag. 523 – 532
10. ZAMFIRESCU N. VELICAN V., SĂULESCU N., SAFTA I., CANTĂR F., 1965 – Fitotehnia, vol. II, Ed. Agrosilvică, București