THE DYNAMICS OF THE BIRDS'FOOT TREFOIL THRIPS (*ODONTOTHRIPS LOTI* HAL.) POPULATIONS IN THE CONDITIONS OF THE S.D. TIMIŞOARA

DINAMICA POPULAŢIILOR DE TRIPŞI (*ODONTOTHRIPS LOTI* HAL.) AI GHIZDEIULUI ÎN CONDIŢIILE DE LA S.D. TIMIŞOARA

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Abstract. *An important aspect at the production of birds – foot trefoil seed, besides the insurance of favourable pedo-climatic conditions was the resistance of that plant to the diseases and pests. One of the most important pests, which produced the biggest damage is the birds'foot trefoil thrips (Odontothrips loti Hal.). Although mentioned in the specific literature, that pest was a little studied in our country and in that context, the paper emphasized the ones experimental data concerning the dynamics of the birds – foot trefoil thrips, adults and larvae. The entomological material, which constituted the object of this study, was collected from one agro ecosystem, at the Didactic Station from Timişoara. The experimentation was placed after the standard method according to the specific literature indications, and the samples were collected with the help of metrical frame of 0.5/0.5 m. The collected insects were prepared, determined and preserved in the Entomology Laboratory of the Agricultural University from Timişoara. Through the monitorizations, which tacked place from 48 hours to 48 hours, resulted that the first adults signal was registered in the second decade of the June month. The biggest number of the catch adults was registered in the date of 28.06.2006, 42 samples, and the biggest number of collected larvae was registered in the date of 10.07.2006, 13 samples. The last captures were registered in the second decade of the July month. The knowledge of the dynamics characteristics of the thrips populations contributes to the establishment of the best moment of applying the treatments concerning the integrated controlling of the mother tree birds – foot trefoil pest.*

Rezumat. *Un aspect important de care trebuie să se ţină seama la producerea de sămânţă la ghizdei, pe lângă asigurarea condiţiilor pedo-climatice favorabile, este rezistenţa acestei plante la boli şi dăunători. Unul dintre cei mai importanţi dăunători, care produce şi cele mai mari pagube este tripsul ghizdeiului (Odontothrips loti Hal.). Deşi menţionat în literatura de specialitate, acest dăunător a fost puţin studiat în ţara noastră şi în acest context, lucrarea î-şi propune să scoată în evidenţă unele date experimentale legate de dinamica populaţiilor de tripşi ai ghizdeiului, adulţi şi larve. Materialul entomologic care constituie obiectul acestui studiu a fost colectat dintr-un singur agroecosistem, la Staţiunea Didactică Timişoara. Experienţa a fost amplasată după metoda standard conform indicaţiilor din literatura de specialitate, iar probele au fost recoltate cu ajutorul ramei metrice de 0,5/ 0,5 m. Insectele colectate au fost preparate, determinate şi conservate în laboratorul de Entomologie al facultăţii de Agricultură Timişoara. Prin monitorizări care au avut loc din 48 în 48 de ore, a rezultat că prima semnalare a adulţilor a fost înregistrată în a doua decadă a lunii iunie. Cel mai mare număr de adulţi capturaţi s-a înregistrat în data de 28.06.2006, 42 de exemplare, iar cel mai mare număr de larve colactate s-a înregistrat în data de 10.07.2006, şi anume 13 exemplare . Ultimele capturi au fost înregistrate în a doua decadă a lunii iulie. Cunoaşterea particularităţilor dinamicii populaţiilor de tripşi contribuie la stabilirea momentului optim de aplicare a tratamentelor în cadrul combaterii integrate a dăunătorului ghizdeiului semincer*

Key words: *birds' foot trefoil, populations, dynamics, Odontothrips loti*

Cuvinte cheie: *ghizdei, populaţie,dinamică, Odontothrips loti*

INTRODUCTION

The birds – foot trefoil importance as forage plant is firstly represented by the fact that it be may replaced with the lucerne and the trefoil from the ones regions a little favourable to those crops. From this point of view the opinion of most explorers and tillers is unanimous because the birds – foot trefoil is a vegetable plant with the biggest adaptability at the weather conditions and soil: the drought, the high humidity, the acid soils or superficial ones, salinity or with a low fertility, the deforested grounds, etc (Dragomir, 1981).

For realizing an integrated protection of the birds – foot trefoil crop concerning the obtaining of a seed of superior quality and quantity, it is necessary to recognize the insects which produce the most important damages of this crop. One of those insects, which produced damages of 80% from the seed quantity, was the birds – foot trefoil thrips.

Investigations concerning the dynamics of the adults and larvae populations of the birds – foot trefoil in the abroad were made by Prisner in the year 1928 in Germany; in Czechoslovakia: Obrtel in the year 1963; in Canada: Pearsall Isobel and Myers Judith in the years 200, 2001; in Slovenia: Trdan Stanislav in the year 2002.

In Romania this kind of investigations was made by Knechtel (1951); Liliana Vasiliu – Oromulu (1971); Perju (1999).

Because in our country there are a little data concerning the populations of the mother tree birds – foot trefoil thrips, cultivated in the West Plain, the paper emphasized the dynamics characteristics of the larvae and adults populations of *Odontothrips loti* Hal. in the conditions from S.D. Timişoara.

MATERIAL AND METHOD

The entomological material was collected from the experimental field of S.D. Timişoara in the year 2006. The experimental field was placed after the standard method (Ciulcă, 2002) in 3 repetitions. Each lot had the length of 2 m and the breadth of 1 m, and the distance between the repetitions was about 4 m (fig. 1).

To monitor the dynamics of the thrips populations were used insulators with metallic skeleton and covered with gauze (fig. 2).

The samples collecting was made with the help of a metrical frame, with the sizes of 0.5/ 0.5 m, during 20 days, from 20 June 2006 to 10 July 2006, with a collecting periodicity at each 48 hours. The insects were collected in paper bags afterwards treated with acetone, chloroform, acetic ethyl etc. and it were brought in the laboratory for the preparing, preservation and determination.

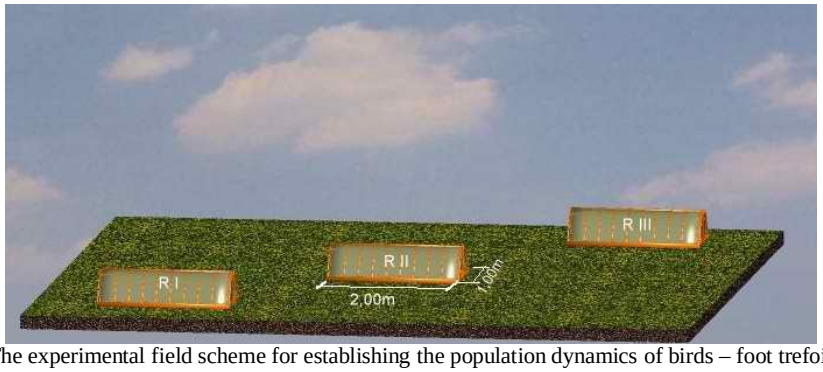

Figure 1. The experimental field scheme for establishing the population dynamics of birds – foot trefoil thrips in S.D. Timişoara conditions

Figure 2. The experimental field with insulators for establishing the population dynamics of birds – foot trefoil thrips in year 2006

RESULTS AND DISCUSSIONS

The dynamics study of the thrips populations collected from the experimental field, observed both the adults and larvae.

The biggest number of adult thrips was collected in 28 June, at the middle of observations period, being in average of 28.66 and in 26 June being in average of 22.66 insects/ sample.

In the first decade of July, the thrips number was reduced, being in average of 14.00 insects/ sample at the last collecting from 10 July.

Table 1

The evolution of adult populations collected from S.D. Timişoara

Harvesting date	**Number of insects of *Odontothrips loti* Hal. - adults**			**Total number of insects**	**Average**
	R_1	**R_2**	**R_3**		
20.06.2006	16	9	34	59	19,66
22.06.2006	7	10	3	20	6,66
24.06.2006	15	1	12	28	9,33
26.06.2006	39	18	11	68	22,66
28.06.2006	27	17	42	86	28,66
30.06.2006	17	18	8	43	14,33
02.07.2006	21	10	7	38	12,66
04.07.2006	20	13	13	46	15,33
06.07.2006	4	18	14	36	12,00
08.07.2006	32	6	4	42	14,00
10.07.2006	22	7	13	42	14,00

From figure 3 we could observed that the populations dynamics of *Odontothrips loti* Hal. adults presented a observable diminution towards the ending collecting period.

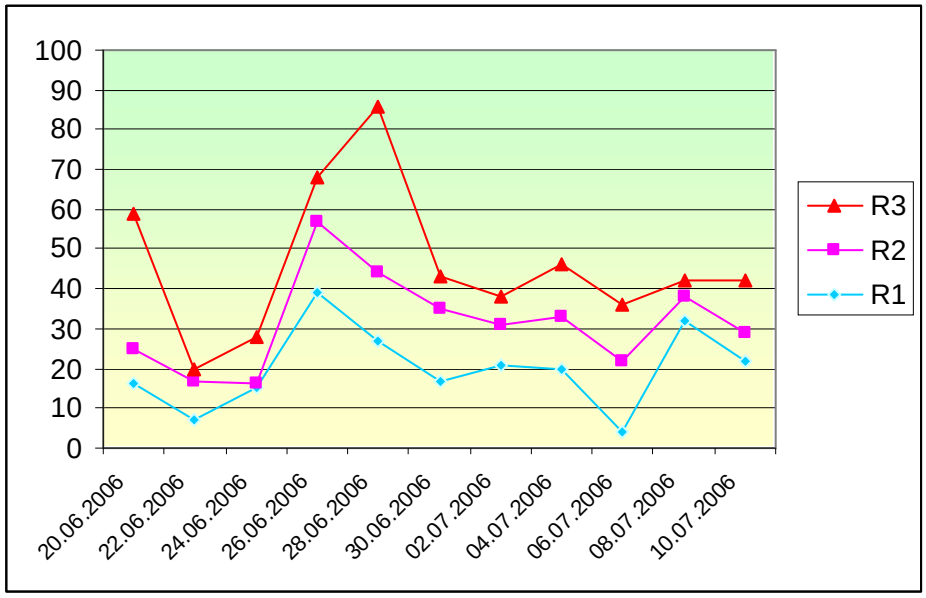

Figure 3. The populations dynamics of *Odontothrips loti* Hal. adults in S.D. Timişoara

From the table 2 we could observed that beginning with the second decade of June month, also in 24 June, when the weather conditions were unfavourable the collected larvae number gradually increased until the first decade of July month (10 July), when there were in average of 29.66 insects/ sample.

Table 2

The evolution of larvae populations collected from S.D. Timişoara

Harvesting date	**Number of insects of *Odontothrips loti* Hal. - larvae**			**Total number of insects**	**Average**
	R_1	**R_2**	**R_3**		
20.06.2006	18	5	21	44	14,66
22.06.2006	0	11	10	21	7,00
24.06.2006	8	1	0	9	3,00
26.06.2006	7	4	2	13	4,33
28.06.2006	4	7	12	23	7,66
30.06.2006	2	6	12	20	6,66
02.07.2006	15	6	11	32	10,66
04.07.2006	9	27	16	52	17,33
06.07.2006	3	45	4	52	17,33
08.07.2006	45	8	6	59	19,66
10.07.2006	46	30	13	89	29,66

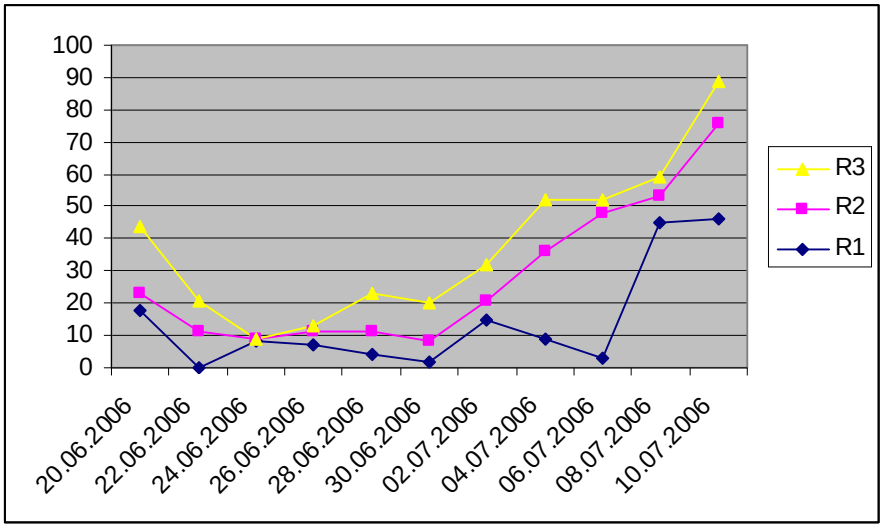

Figure 4. The populations dynamics of *Odontothrips loti* Hal. larvae in S.D. Timişoara

From the figure 4 we could observed that in the period 20 – 24 June was produced a diminution of larvae populations, that because of the unfavourable weather conditions, afterwards its gradually increased until the last collecting from the date of 10 July, when there were registered the maximum values of *Odontothrips loti* Hal. larvae thrips, collected from the experimental field.

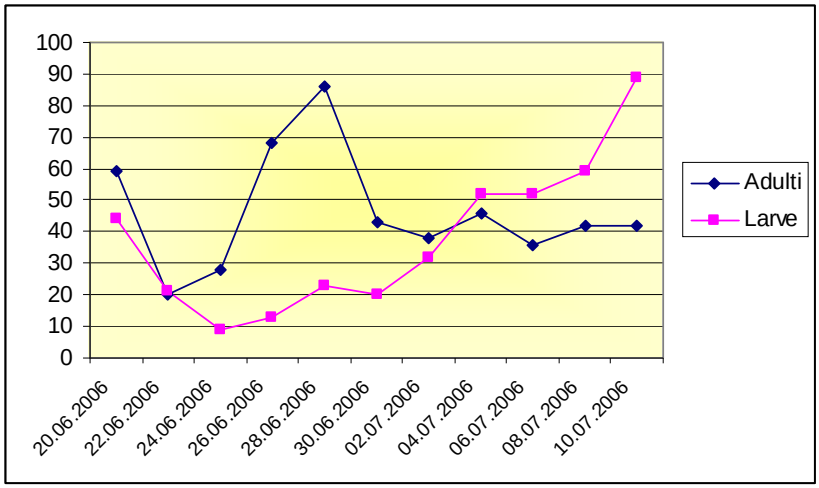

Figure 5. The populations' dynamics of birds – foot trefoil thrips adults and larvae collected from S.D. Timişoara

Examining the population dynamics of the larvae and adults (figure 5) it could observed a gradual diminution of the adults population beginning with the third decade of June month, also from 28.06 and a progressive increasing of the larvae populations beginning with the ending of June month, also from 30.06.2006.

After the filling with new data concerning the populations dynamics of *Odontothrips loti* Hal. larvae and adults, it will establish the suitability and the best moment for applying the controlling treatments.

CONCLUSIONS

The highest number of *Odontothrips loti* Hal. adults was identified in 28 June in the middle period of the observation, being in average of 28,66 insects/ sample

The populations dynamics of the adults was characterized through an observable diminution in the third decade of June month afterwards it was registered an increasing, follow by a gradual decreasing in the first decade of July month

The smallest larvae number was collected in the first decade of July month, also in 10 July being in average of 29.66 insects/ sample

The populations dynamics of the larvae indicates that after a diminution in the period 20-24 June, it registered a gradual increasing until the first decade of July month, also of 10 July 2006 one

Beginning with the third decade of June month it existed a gradual diminution of the adult populations and in the same time a progressive increasing of the larvae populations.

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