THE EVOLUTION OF THE THRIPS POPULATIONS (*FRANKLINIELLA OCCIDENTALIS*) OF THE TOMATOES IN THE GREENHOUSES FROM AGRICULTURAL SOCIETY AGRO-DOR., FROM DOROBANȚI LOCALITY, ARAD DISTRICT

DINAMICA POPULAȚIILOR DE TRIPŞI (*FRANKLINIELLA OCCIDENTALIS*) AI TOMATELOR ÎN SERELE DE LA SOCIETATEA AGRICOLĂ AGRO-DOR., DIN LOCALITATEA DOROBANȚI, JUDEȚUL ARAD

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Abstract: *In the tomatoes crop from the protected spaces it must pay attention that besides the insurance of the weather conditions and humidity,also to observ the behaviour of that plant at the pests and diseases. One of the most important pests which produces also the bigest damages to the tomatoes crops from the greenhouses is the californian thrips (Frankliniella occidentalis). In the West side of the country there are a few investigations concerning this insect and that because the paper emphasizes some experimental data about the bioecology and evolution of the pests in the tomatoes crop from the protected spaces. The peculiarities knowledge of the thrips populations contributes to establish the best moment in applying the treatments against this pest in the tomatoes crop from the protected spaces.*

Rezumat: *În cultura tomatelor din spaţiile protejate trebuie să se ţină seama, pe lângă asigurarea condiţiilor de temperatură şi umiditate favorabile şi de comportarea acestei plante la boli şi dăunători. Unul dintre cei mai importanţi dăunători, care produce şi cele mai mari pagube culturilor de tomate din sere este tripsul californian (Frankliniella occidentalis). În partea de Vest a ţării există puţine cercetări privind această insectă şi de aceea lucrarea îşi propune să scoată în evidenţă unele date experimentale legate de bioecologia şi dinamica populaţiilor dăunătoare în cultura de tomate din spaţiile protejate. Cunoaşterea particularităţilor dinamicii populaţiilor de tripşi contribuie la stabilirea momentului optim de aplicare a tratamentelor în cadrul combaterii integrate a acestui dăunător din cultura tomatelor din spaţiile protejate.*

Key words: *the californian thrips, protected spaces, populations evolution*
Cuvinte cheie: *tripsul californian, spaţii protejate, dinamica populaţiilor*

INTRODUCTION

The international interchanges in cultivating flowers truck gardening and agriculture domaine constitute the introduction cause of a lot of pests in the crops.

In the vegetables and ornamental plants crops from the protected spaces, the pests are very dangerous because they are easily propagated, they could occupy in a very short time big surfaces from a greenhouses, producing remarkable damages.

The damages caused by the thrips in the protected spaces are frequent, the crops being either qualitative and commercially depreciated or totally compromised.

Frankliniella occidentalis thrips is considered a recent pest identified in the greenhouses from Romania, being met for the first time to Işalnița in Dolj district, by VASILIU-OROMULU LILIANA, in 1993 year.

The investigations concerning that domaine from abroad were accomplished: by YONCE C.E., BESHEAR R.J., PAYNE J.A., HORTON D.L., in 1990 year, HIGGINS, C.J.

and J.H. MYERS, (1992a), (1992b) in S.U.A., in the Netherlands by G. VIERBERGEN (1995); in Canada by PEARSALL, I. A. (1998), PEARSAL ISOBEL and MYERS JUDITH (2000, 2001).

In Romania, investigations in that domaine were accomplished by KNECHTEl (1951), LILIANA VASILIU-OROMULU (1993, 2001); MUNTENAŞU MARIANA (2006).

MATERIAL AND METHOD

The entomological material which constitutes the object of this study was collected in the second cycle of the year 2007, to the Agricultural Society Agro-Dor., from Dorobanți locality, district Arad. The samples were cropped from a number of 3 repetition, each repetition with a number of 10 plants.

Every repetition had a length of 3m, the distance between repetitions was about 80 cm, and the distance between plants/rank about 30 cm.

The samples crop from the tomatoes crop was made during two months, beginning with the 10th of May and ending with the 3rd of July, with e periodicity of collecting at 3-4 days. The insects crop was made in the morning between 8-9 hours when the temperature was swinging between 18-24°C and with a humidity of 64-73% (table 1).

Table 1.

The data of the samples crop for the investigations of the populations evolution from tomatoes crop in the year 2007

The stationary	The year	The crop period
The Agricultural Society Agro-Dor., Dorobanți	2007	10. May
		14. May
		18. May
		22. May
		25. May
		28. May
		01. June
		05. June
		08. June
		12. June
		15. June
		19. June
		22. June
		26. Iunie
		29. Iunie
		03. Iulie

The entomological material was collected n the polyethylene bags through pouching the plant organs which presented the samples for analyzing. Afterwards, the insects were treated with acetic ethyl, acetone, chlorophorm, etc. and were transported in the Entomology Laboratory of the Agricultural Faculty from Timişoara from electing, preserving and determination (fig.1).

The study of the thrips population evolution, collected from the experimental field views only the *Frankliniella occidentalis* adults. The adults appearance was observed for the first time in the date of 10.05.2007.

From the table 2 it could observ that the most of collected adults, 170 samples, were in the date of 22.06.2007.

The smallest number of the collected adults was in 10.05.2007 with a number of 15 samples and in 14.05.2007 a number of 19 samples.

The biggest number of the collected adults thrips in 22 of June it were in average of 56,66 and in 19 of June in average of 42,33.

A number comparative small of samples was collected also in the second and the third decade of May month, having an average between 5,00 and 13,33 samples.

Fig. 1. The samples crop for the investigations of the populations evolution from tomatoes crop in the year 2007

Table 2

Frankliniella occidentalis adults colected from the experimental field from Agricultural Society Agro-Dor., Dorobanți

The colecting date	**The *Frankliniela occidentallis* samples number -adults-**			**The total of the samples**	**The average**
	R_1	**R_2**	**R_3**		
10.05.2007	8	3	4	15	5.00
14.05.2007	9	4	6	19	6.333333
18.05.2007	9	4	9	22	7.333333
22.05.2007	12	7	10	29	9.666667
25.05.2007	12	7	14	33	11.00
28.05.2007	13	12	15	40	13.33333
01.06.2007	21	14	21	56	18.66667
05.06.2007	25	18	19	62	20.66667
08.06.2007	36	23	21	80	26.66667
12.06.2007	37	30	24	91	30.33333
15.06.2007	43	42	27	112	37.33333
19.06.2007	49	51	27	127	42.33333
22.06.2007	71	59	40	170	56.66667
26.06.2007	39	42	34	115	38.33333
29.06.2007	23	35	34	92	30.66667
03.07.2007	21	5	4	30	10.00

From the figure 2 it could observ that the evolution of *Frankliniella occidentalis* adults populations presented a maximum of samples in the date of 22.06.2007, and a minimum of samples in the date of 10.05.2007.

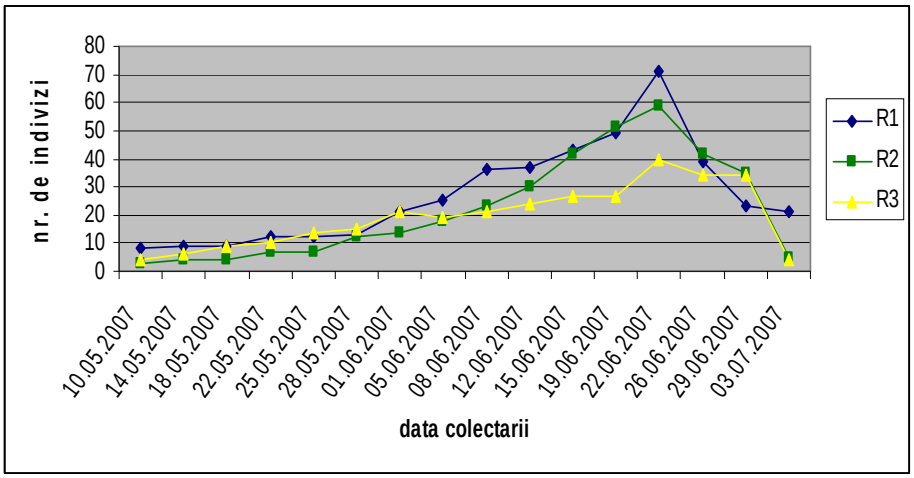

Fig. 2 The evolution of the thrips populations (*Frankliniella occidentalis*), collected in the tomatoes greenhouse from Dorobanți locality in the year 2007

Beginning with 10.05.2007 it could observ a continuous increasing of the insects number collected until the date of 22.06.2007, those number increasing from an average of 5,00 samples to an average of 56,66 samples.

It could observ that in 22 of June the thrips number decreased until the 03rd of July, from an average of 56,66 samples to 10,00 samples.

It could also observ that in the date of 22.06.2007 and until the date of 26.06.2007 the thrips number is in decreasing from an average of 56,66 samples to 38,33 samples after that it follows a continuous decreasing of those number, in the date of 29.06.2007 their number being of 30,66 samples.

The smallest number number of the samples exactly 5,00 samples was cropped in the 10th of May, but also in 03rd of July, the last day of collecting, a number of insects comparative small was cropped such as 10,00 samples.

The adults populations evolution of *Frankliniella occidentalis* from the tomatoes crop presented the maximum of values in the case of the all repetitions which are in increasing in the first, the second and the third decade of the month June with a maximum in 19-22 of June 2007, followed by an obvious diminuation to the end of the collecting period.

CONCLUSION:

From the total of *Frankliniella occidentalis* adults collected from the tomatoes crop of protected spaces, the maximum of the samples was collected in 22.06.2007 with an average of 56,66 samples.

The minimum number of the collected adults was registered in 10.05.2007 with an average of 5,00 samples.

The number of the samples collected gradually increased from the date of 10.05.2007 until 22.06.2007 when the biggest number of the samples was registered.

The evolution of *Frankliniella occidentalis* adults population from the tomatoes crop presented the maximum of values in the case of the all repetitions which were in increasing in the first, the second, the third decade of the June month with a maximum in 19-22 of June 2007, followed by a diminuation to the end of the collecting period.

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