THE ANALYSIS OF SOME PESTICIDES IN THE BIRDS – FOOT TREFOIL THRIPS (*ODONTOTHRIPS LOTI* HAL.) CONTROL

TESTAREA UNOR PESTICIDE ÎN COMBATEREA TRIPSULUI GHIZDEIULUI (*ODONTOTHRIPS LOTI* HAL.)

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Abstract. *At the birds – foot trefoil crop one of the most important aspects is the production of seed, so for the realisation of an integrated protection of a superior quality seed and in a great quantity, is necessary to know the insects that produce the most important damages to this crop. One of these insects is the birds – foot trefoil thrips (Odontothrips loti Hal.). For realizing the chemical treatments in the years 2004 and 2005, the experimental field was placed at the Production and Investigation Station for the Fields Crop from Timişoara. The experimental field was formed from 3 repetitions, each repetition having 7 variants. The usage of pesticides was the same in the all two years of the experimentation, as follows:; V_1 – treated with Fastac 10 EC; V_2 - treated with Mospilan 20 SP; V_3 - treated with Calypso 480 SC; V_4 - treated with Confidor 70 WG; V_5 - treated with Actellic 50 EC; V_6 - treated with Decis 2,5 EC; V_7 – untreated testifier. In the year 2004 the most efficient product in controlling the birds – foot trefoil thrips is the Actellic 50 EC product, which had an efficaciousness coefficient of 90% and the lowest results were obtained after the usage of Confidor 70 WG product, with an efficaciousness coefficient, it was of 4%. In the year 2005 the best results were obtained after the usage of same product Actellic 50 EC, which had an efficaciousness coefficient of 69,5%, and the lowest results were obtained after the usage of Mospilan 20 SP product, with an efficaciousness coefficient of 43,3%*

Rezumat. *La cultura ghizdeiului una dintre cele mai importante aspecte este producerea de sămânță, de aceea pentru realizarea unei protecții integrate a culturii de ghizdei în vederea obținerii unei sămânțe de calitate superioară şi în cantitate sporită este necesar să se cunoască insectele care produc cele mai importante pagube acestei culturi. Una dintre aceste insecte, este tripsul ghizdeiului (Odontothrips loti Hal). Pentru efectuarea tratamentelor chimice în anii 2004 şi 2005, câmpul de experiență a fost amplasat la Stațiunea de Cercetare şi Producție pentru Cultura Pajiştilor Timişoara. Câmpul experimental a fost format din 3 repetiții, fiecare repetiție având 7 variante. Pesticidele utilizate au fost aceleaşi în toți cel trei ani de experimentare, după cum urmează: V_1 – martorul netratat; V_2 – tratat cu Fastac 10 EC; V_3 – tratat cu Mospilan 20 SP; V_4 – tratat cu Calypso 480 SC; V_5 – tratat cu Confidor 70 WG; V_6 – tratat cu Actelic 50 EC; V_7 – tratat cu Decis 2,5 EC. În anul 2004 cel mai eficient produs în combaterea tripsului ghizdeiului este produsul Actelic 50 EC,care a avut un coeficient de eficacitate de 90%, iar cele mai slabe rezultate au fost obținute după utilizarea produsului Confidor 70 WG, al cărui coeficient de eficacitate a fost de 1,4%. În anul 2005 cele mai bune rezultate au fost obținute tot după utilizarea aceluiaşi produs Actelic 50 EC, care a avut un coeficient de eficacitate de 69,5%, iar cele mai slabe rezultate au fost obținute după utilizarea produsului Mospilan 20 SP, cu un coeficient de eficacitate de 43,3%.*

Key words: *pesticides, birds – foot trefoil thrips, control*
Cuvinte cheie: *pesticide, tripsul ghizdeiului, combatere*

INTRODUCTION

In the conditions of our country, the productions of birds – foot trefoil seed are in generally, reduced, especially in the droughty regions. Besides the insurance of favourable development conditions, at the production of birds – foot trefoil seed, it is important also the behaviour of that plant to the pests and diseases attack.

One of the most important pests is the birds – foot trefoil thrips (*Odontothrips loti* Hal.), which produces damage of 80% from the total production.

The specific literature from our country and the one from abroad include a reduced number of information concerning this variety: Bailey, 1957; Hrisafi, 1961; Bournier et Kochbav, 1965; Lewis Trevor, 1973; Schliephake & Karlheinz, 1981; Bournier, 1983; Schliephake, 1983; Perju, 1993; Perju, 1999. In this context, the paper presents some pesticides results used in controlling the birds – foot trefoil in the West Plain conditions.

MATERIAL AND METHOD

For the insecticides efficaciousness analysing in the year 2004 and 2005, the experimental field was placed at the Production and Investigation Station for the Fields Crop from Timişoara. The experimental field was placed after the randomized block method (Ciulcă, 2002), in 3 variants and 7 repetitions, the lot sizes being: 12 m length, 2 m width, with a distance between repetitions of 2 m, and between the variants of 0.25 m, the total area of experimental field for pesticides analysing, being of 800 m^2 (fig. 1).

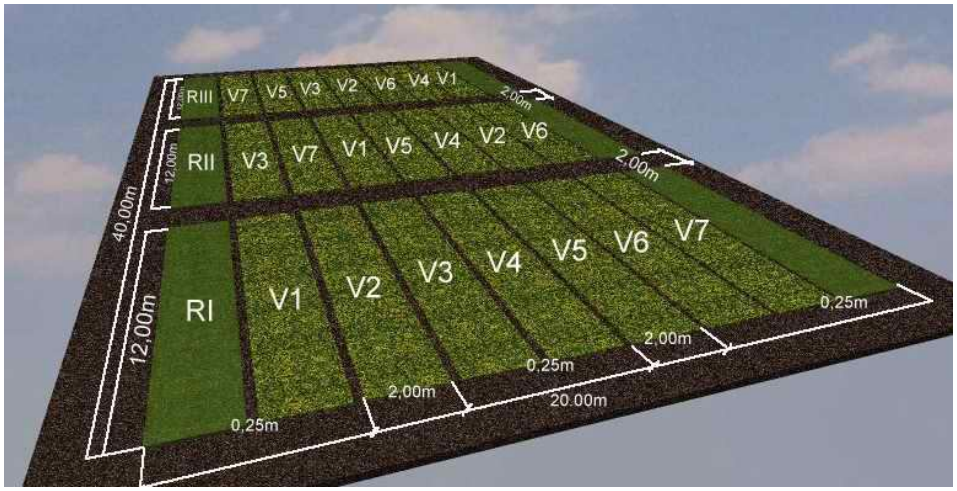

Fig. 1. The experimental field scheme for pesticides analysing

For emphasizing the product with the best efficaciousness in controlling, were used 6 variants: V_1= Fastac 10 EC – 0.02%; V_2= Mospilan 20 SP – 0.025%; V_3= Calypso 480 SC – 0.02%; V_4= Confidor 70 WG – 0.02%; V_5= Actellic 50 EC – 0.1%; V_6= Decis 2.5 EC – 0.05%, whose efficaciousness was compared with the untreated testifier. For that, were cultivated three samples: before the treatment, after 48 hours from the treatment accomplishment and at 7 days from the treatments accomplishment.

The samples were harvested with a metric frame of 0.5/0.5 m. The treatments were accomplished in 23 June 2004 and also in 28 June 2005. The insecticides applying was made with the sprinkling apparatus with manual action with air compression. After 7 days from the treatment the obtained results were not conclusive. For the results interpretation was used the Henderson – Tilton efficaciousness coefficient.

RESULTS AND DISCUSSIONS

Before the treatments realisation from 2004 the thrips number from the experimental field was of 17.90 exemplary, being between 14.33 and 20.00 insects/ sample.

The treatments were realized in 22 June 2004. After 48 hours the number of alive insects was of 14.52 exemplary, being between 12.33 and 16.66 insects/ sample (table 1).

The number of the collected samples was reduced, the birds – foot trefoil being in the first year of vegetation.

At the 48 hours from the treatment realisation the maximum number of samples was registered to the untreated testifier variant that being in average of 17 insects/ lot, and the least at the treated variants with Decis 2.5 CE and Confidor 70 WG.

The evolution of the thrips population mortality indicates high values of that after 48 hours from the treatments applying (figure 2).

Table 1

The birds – foot trefoil mortality after 48 hours of treatments realisation at I.C.C.P. Timişoara in year 2004

Harvesting date	Repetition	Number of alive insects/ variants							Average
		V_1 (tr. cu Fastac 10 EC)	V_2 (tr. cu Mospilan 20 SP)	V_3 (tr. cu Calypso 480 SC)	V_4 (tr. cu Confidor 70 WG)	V_5(tr. cu Actellic 50 EC)	V_6 (tr. cu Decis 2.5 EC)	V_7 (untreated testifier)	
23.06. 2004	R I	17	14	22	17	22	18	25	
	R II	18	28	23	15	22	15	17	
	R III	21	18	14	11	11	4	15	
	Average	18.66	20	19.66	14.33	18.33	15.33	19	17.90
25.06. 2004	R I	13	13	20	15	18	15	19	
	R II	13	15	20	13	20	15	17	
	R III	16	13	10	10	8	4	15	
	Average	14	13.66	16.66	12.66	15.33	12.33	17	14.52

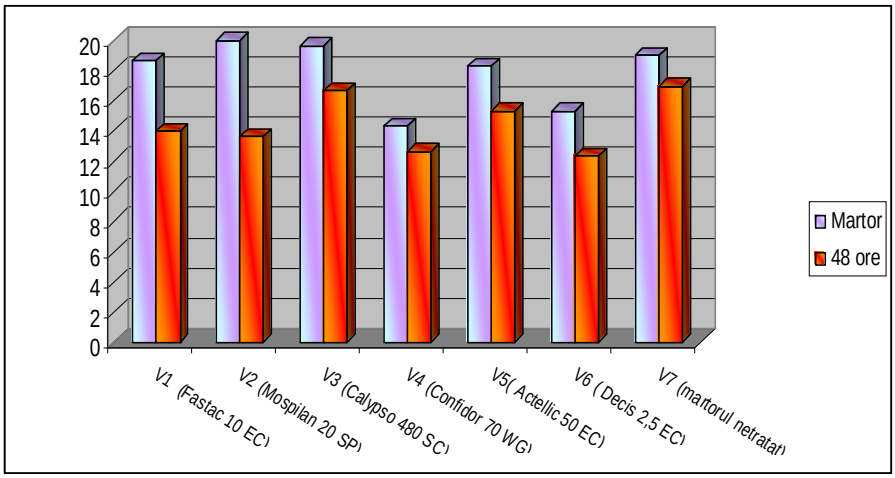

Fig. 2. The birds – foot trefoil mortality evolution after 48 hours from the treatments at S.D. Timişoara in year 2004

In the year 2005 before the treatments applying the average of collected thrips from the experimental field was in average of 2249.1 being between 1216 and 2880 insects/ samples.

The treatments were realized in 29 June 2005. After 48 hours from the insecticides applying the alive samples number was in average of 1535.8 being between 512 and 1856 insects/ samples (table 2).

Table 2

The birds – foot trefoil mortality after 48 hours of treatments realisation at I.C.C.P.Timişoara in year 2005

Sampling date	Repetition	Number of living insects per plant							Average
		V_1 (tr. Cu Fastac 10 EC)	V_2 (tr. Cu Mospilan 20 SP)	V_3 (tr. Cu Calypso 480 SC)	V_4 (tr. Cu Confidor 70 WG)	V_5(tr. Cu Actellic 50 EC)	V_6 (tr. Cu Decis 2,5 EC)	V_7 (control)	
28.06.2005	R I	4800	4416	3264	6720	1536	4032	2112	2249.1
	R II	1152	1152	960	576	1344	1920	1344	
	R III	2112	1536	576	1344	768	1536	576	
	Media	2688	2368	2752	2880	1216	2496	1344	
01.07. 2005	R I	3840	2496	4416	2688	768	1344	2304	1535.8
	R II	192	384	1920	576	384	1724	1536	
	R III	1344	2688	1920	1344	384	1728	1728	
	Media	1792	1856	1600	1536	512	1598.6	1856	

In the second year of birds – foot trefoil vegetation the number of collected thrips was more bigger that in the first year, the average of thrips was of 17,90 exemplary/ sample in the year 2004 and in year 2005 it was 2249,1 insects/ sample.

After 48 hours from the treatments applying the maximum number of alive samples collected was at the untreated testifier variant and the treated one with Mospilan 20 SP and the minimum at the treated variant with Actellic 50 EC. The evolution of the thrips population mortality indicates high values after 48 hours from the treatments applying (figure 3).

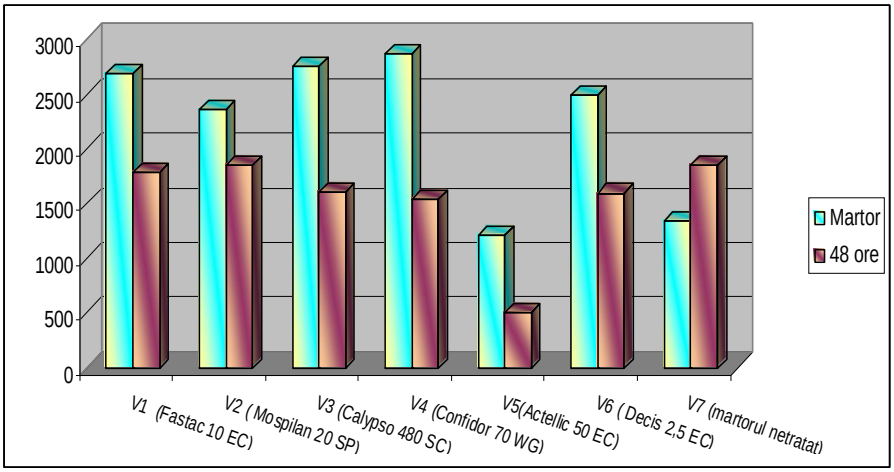

Fig. 3. The birds – foot trefoil mortality evolution after 48 hours from the treatments at S.D. Timişoara in year 2005

The efficaciousness coefficient (E%) presented the highest values in the year 2004 at the V_5 (Actellic 50 EC variant)and at the V_5 (Actellic 50 EC variant) and V_4(Confidor 70 WG variant) in the year 2005 (table 3).

Table 3

The efficaciousness coefficient in 2004 – 2005

Year	E% (efficaciousness coefficient)					
	V_1 (tr. cu Fastac 10 EC)	V_2 (tr. cu Mospilan 20 SP)	V_3 (tr. cu Calypso 480 SC)	V_4 (tr. cu Confidor 70 WG)	V_5 (tr. cu Actelic 50 EC)	V_6 (tr. cu Decis 2,5 EC)
2004	16%	23,5%	5,2%	1,4%	90%	10%
2005	52,2%	43,3%	55%	61,4%	69,5%	53,7%

The products with the best results belonged to the 4th group of toxicity, being used in the protection conditions of the surrounding medium (figure 4).

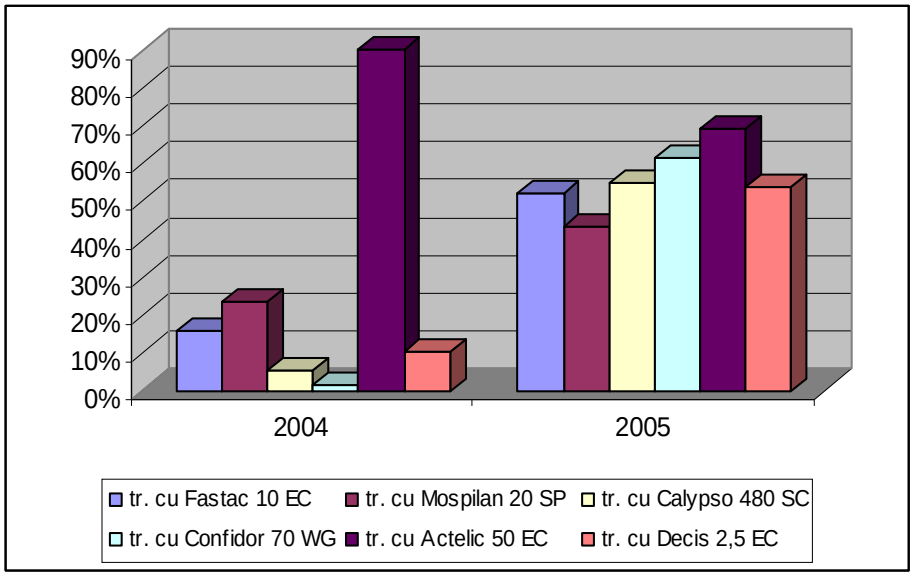

Fig. 4. The efficacity of the products used in the birds – foot trefoil controlling in 2004 – 2005

From the figure 3 we can be notice that in the year 2004 the best efficaciousness in controlling the birds – foot trefoil thrips had the Actellic 50 EC product. In the year 2005, the best efficaciousness had the same Actellic 50 EC product, and also the Confidor 70 WG product. The best efficaciousness in the two years of the experience had the Actellic 50 EC product, and Confidor 70 WG, which registered a progressive efficaciousness in controlling the birds – foot trefoil thrips.

CONCLUSIONS

In the first experimental year the number of the birds – foot trefoil thrips being between 14.33 and 20.00 insects/sample, with an average of 17.90 insects/ sample on a new set up crop

After 48 hours from the treatments applying the number of alive samples lowered being between 12.33 and 16.66 insects/ sample, with an average of 14.52 insects/ sample

In the second experimental year the average number of the birds – foot trefoil thrips was between 1216 and 2880 insects/sample, being in average of 2249.1 insects/ sample

After 48 hours from the treatments applying the number of alive samples collected was between 512 and 1536 insects/sample, with a average of 1535.8 insects/ sample

In the two experimental years, the highest efficaciousness coefficient was registered at the variants treated with Actellic 50 EC and Confidor 70 WG.

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