ESTABLISHMENT OF THE OPTIMUM MOMENTS FOR TREATMENTS APPLYING AGAINST THE *CYDIA FUNEBRANA* TR. (*LEPIDOPTERA, TORTRICIDAE*) PEST IN THE CLIMATIC CONDITIONS OF DÂMBOVIȚA COUNTY IN THE YEARS 2005-2006

STABILIREA MOMENTELOR OPTIME DE APLICARE A TRATAMENTELOR ÎMPOTRIVA DĂUNĂTORULUI *CYDIA FUNEBRANA* TR.(*LEPIDOPTERA, TORTRICIDAE*) ÎN CONDIȚIILE CLIMATICE ALE JUDEȚULUI DÂMBOVIȚA, ÎN PERIOADA 2005-2006

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Abstract. *Cydia funebrana Tr. is a dangerous pest for the plum trees orchards producing damages that reach 50-80% of entire production for the IInd generation (Ghizdavu and contrib. -1997). For successful control actions against the plums worm, warning of the optimum moments for treatments applying has a great importance. As a consequence of the registered captures in the AtraFUN synthetic sexual pheromones traps, it was recomended to apply treatments as following:*

- in the year 2005, from 17th to 22nd May and from 27th May to the 1st of June against the Ist generation, from 16th July to 21st and from 26th July to 31st against the IInd generation;

- in the year 2006, from 18th to 23rd May and from 28th May to 6th June against the Ist generation, from 22nd to 27th June and from the 1st to 6th of July against the IInd generation;

Rezumat. *Cydia funebrana Tr. este un dăunător periculos al plantațiilor de prun, pierderile înregistrate la generația a II-a putând ajunge la 50-80% din producție (Ghizdavu şi colab.-1997).Pentru reuşita acțiunilor de combatere a viermelui prunelor avertizarea momentelor optime de aplicare a tratamentelor are o mare importanță. În urma capturilor înregistrate în capcanele cu feromoni sexuali sintetici AtraFUN, tratamentele au fost recomandate a se efectua după cum urmează:*

-în anul 2005, pentru combaterea generației I, în perioadele 17-22.05 şi 27-01.06, iar împotriva generației a II-a, în perioadele 16-21.07 şi 26-31.07;

- în anul 2006, pentru combaterea generației I, în perioadele 18-23.05 şi 28-03.06, iar împotriva generației a II-a, în perioadele 22-27.06 şi 01-06.07.

Cydia funebrana Tr. is a dangerous pest for the plum trees orchards (Ghizdavu and contrib., 1997). The insects of the Ist generation produce falling of the damaged fruits from plum trees resulting 4 to 12% losses in crops for the early

cultivars (Victoria Şuta, 1980). Even bigger losses, of 50 to 80% of the crops, are produced by the IInd generation.

The most efficient methods to control this pest are chemical and biological, all treatments beeing applied on warning (Paşol and contrib., 2007). Therefore, the establishment of the optimum moments to apply insecticides has a special importance.

MATERIAL AND METHOD

Observations were effectuated in the years 2005 and 2006 into the plum trees orchards from the Phytosanitary Unit of Dâmboviţa county.

The moment of eggs laying, the dynamics of males flight after the pheromonal captures and the sum of effective temperature degrees were allowed for establishment of the optimum moments to control the plums worm.

RESULTS AND DISCUSSIONS

Using this method, the following rule was respected for each generation: the Ist treatment was warned on the date when the first eggs were laid and the IInd treatment was warned 10 to 20 days after the Ist; it was recomended to apply the first treatment 2-3 days after the eggs laying and the second treatment, according to the remanence of the insecticide, during the period of maximum flight. Starting from this rule, we present further the warnings we established in the years 2005 and 2006.

Table 1

Biological fact sheet for the *Cydia funebrana* Tr. pest in the year 2005

Generation	Developmental stage	Date		$\sum(t_n-9)$	
		of first appearances	of last appearances	at the begining	at the end
Ist	larva	-	14.05.2005	-	212,9
	pupa	19.04.2005	05.06.2005	10,3	421,1
	adult	05.05.2005	12.06.2005	103,9	523,0
IInd	egg	14.05.2005	24.06.2005	212,9	664,9
	larva	31.05.2005	02.07.2005	369,3	777,2
	pupa	10.06.2005	10.08.2005	492,2	1267,0
	adult	20.06.2005	22.08.2005	622,5	1426,6
Ist	egg	13.07.2005	02.09.2005	973,0	1578,1
	larva	10.08.2005	spring	1267,0	spring

Treatments warning for the year 2005 was established as follows:

- for the Ist generation control, the warning bulletin was released on 14th May , when the adults of the Ist generation started the eggs laying, the first treatment beeing recommended to be applied between 17th and 22nd May (2-3 days after the warning), the second treatment 10-12 days after the first (according to the remanence of the insecticide), between 27th May and 1st June, period which corresponds with the maximum of the flight curve for the adults of the Ist generation.
- for the IInd generation control, the warning bulletin was released on 13th July (when the first eggs were laid by the adults of the IInd generation), the third treatment beeing recommended to be applied between 16th and 21st June (period which corresponds with the maximum of the flight curve for the adults of the IInd generation); the fourth treatment followed 10 days after the third, but it was necessary only in case of a strong attack because the third treatment included both the apparition of the first larvae belonging to the IInd generation and the maximum of the adults flight curve.

According to case, the treatment scheme to control the plums worm, *Cydia funebrana* Tr., in the year 2005 was 2+1 or 2+2 (table 1).

The sum of effective temperature degrees, at which warning of the optimum moments for treatments applying was done, corresponding to the start of eggs laying, was of 212,9°C for the Ist generation and of 973,0°C for the IInd generation.

Table 2

Biological fact sheet for the *Cydia funebrana* Tr. pest in the year 2006

Generation	Developmental stage	Date		$\sum(t_n-9)$	
		of first appearances	of last appearances	at the begining	at the end
Ist	larva	-	20.05.2006	-	215,8
	pupa	18.04.2006	22.06.2006	98,1	558,8
	adult	02.05.2006	25.06.2006	153,3	604,7
IInd	egg	16.05.2006	27.06.2006	197,0	711,8
	larva	27.05.2006	15.07.2006	302,0	910,1
	pupa	12.06.2006	09.09.2006	452,4	1770,6
	adult	20.06.2006	23.09.2006	548,4	1821,0
Ist	egg	19.07.2006	27.09.2006	1212,1	1862,8
	larva	07.08.2006	spring	1480,2	spring

Treatments warning for the year 2006 was established as follows:

- for the Ist generation control, the warning bulletin was released on 16th May, when the adults of the Ist generation started the eggs laying. First treatment was recommended to be done between 18th and 23rd May and the second between 28th May and 3rd June.

- for the IInd generation control, the warning certificate was released on 19th July (the moment of first eggs laying for the adults of the IInd generation), the third treatment beeing recomended to be applied between 22nd and 27th June, period that corresponds also with the adults maximum flight. This fact made the fourth treatment not to be obligatory 10 days after. In the situation of a high degree of attack this treatment was recomended though between 1st and 6th July.

From the data presented above it results that the treatment scheme to control the plums worm in the year 2006 was, similar with the year 2005, 2+1 or 2+2 according to case (table 2).

The sum of the effective temperature degrees, corresponding with the start of eggs laying, for which warning of optimal moments to apply treatments was done, was of 197,0°C for the Ist generation and of 1212,1°C for the IInd generation.

CONCLUSIONS

1. *Cydia funebrana* Tr. is a dangerous pest for the plum trees orchards which is able to produce damages of 50-80% of the crop for the IInd generation (Ghizdavu and contrib. -1997).

2. The most efficient methods to control this pest are chemical and biological, all treatments beeing done on warning (Paşol and contrib., 2007), reason for which the establishment of the optimum moment to apply the insecticides has a great importance.

3. For each generation the following rule was respected: Ist treatment was warned on the date of the first eggs laying and the IInd treatment 10-12 days after the first. It was recomended to apply the Ist treatment 2-3 days after the start of the eggs laying and the IInd one during the period of maximum flight, according to the remanence of the insecticides used.

4. In the climatic conditions of Dâmbovița county, the sum of the efective temperature degrees, corresponding with the start of eggs laying, on which treatments warning was done, was of 212,9°C for the Ist generation and of 973,0°C for the IInd generation in the year 2005 respectively of 197,0°C for the Ist generation and of 1212,1°C for the IInd generation in the year 2006.

BIBLIOGRAPHY

1. **Ghizdavu I., Paşol P., Pălăgeşiu I., Bobârnac B., Filipescu C., Matei I., Georgescu T., Baicu T., Bărbulescu Al.,** 1997 - *Entomologie agricolă*. Editura Didactică şi Pedagogică, R. A., Bucureşti.
2. **Paşol P., Dobrin Ionela, Frăsin Loredana,** 2007 - *Tratat de entomologie specială*. Editura Ceres, Bucureşti.
3. **Şuta Victoria,** 1980 - *Metodici de prognoză şi avertizare a trtamentelor împotriva bolilor şi dăunătorilor plantelor de cultură*. Redacția de Tehnică Agricolă, Bucureşti.