RESEARCHES CONCERNING THE BIOECOLOGY OF HOPLOCAMPA MINUTA IN THE ORCHARDS ALONG BISTRA VALLEY – CARAS SEVERIN

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Abstract: *Hoplocampa minuta Crist, is spread in all the areas where plum tree are being cultivated and it produces important damages, especially in the not- maintained orchards. That is why during the period 2010 -2012 there were made researches in the orchards along Bistra Valley (Glimboca), Caras Severin, in order to observe the pest s bioecology so that there can be applied preventive and curative methods against it.During the research period the adults appeared between 8th and 26th April, when there was an effective temperature sum of 47,2°C; the beginning of ponta look place between 10th and 28th April when there was an effective temperature sum of 88,6°C and the larvae appeared in the period 28th April and 18th May, when there was an effective temperature sum of 150,9 °C.*

Key words: *pest, Hoplocampa minuta, bioecology, plum tree*

INTRODUCTION

This work contains data on plum culture, its importance, favorable conditions of plum culture development, the importance of fruit sin marketing. It also includes description of this important pest of plum (Haplocampa minuta Crist.), stages of development , condition in wich it appears, how it attacks.

This paper aims to make contributions to the knowledge of phenology, biology and ecology of black wasps plums , important pest of plum in southwest of the contry, as in the whole area of culture of this tree species, the rationalization of fighting treatments.

Hoplocampa minuta Crist. is a monophag insect, so it's larvae attack only the plums. The attacked plums don't develop anymore; they stay small and fall down of the tree. The greatest damages are done to Vinete romanesti, Tuleu gras and d'Agen plum varieties.

MATERIAL AND METHODS

The researches were done in a plum orchard along Bistra Valley, in the Caransebes fruit culture area, where is cultivated Anna Späth plum tree variety by observing the biology and ecology of the pest, based on the climatic conditions, during a period of three years.

Starting with the green button phenophase 30 branches of three plum trees were isolated with muffs in order to determine the period before egg deposition, the beginning and density of the ponta. Starting with the flowering of mirobolan (*Prunus cerassifera*) there were done observations of growth daily, in the boxes.

For this research there were used the effective temperature sum for each biological stage, the 10 days temperatures around the appearance of different stages and the correlation between plum trees phenology and the appearance period of the most important stages.

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RESULTS AND DISCUSSIONS

After the observations made in the orchard, during the period of research 2010-2012, there were obtained the results presented in tables 1-3.

Hoplocampa minuta Crist. appeared in the plum orchard along the Bistra Valley (Glimboca, Caransebes), during the period 2010-2012 in the period 8th April in 2012 and 26th April in 2010, when there was a medium effective temperature sum of 47,2°C (table 1).

Table 1.

The biological stages of *Hoplocampa minuta* Crist.
during the period 2010- 2012, in the fruit culture area Caransebes

Specification	2010	2011	2012	Average
I ADULT				
Date of appearance	26.04	15.04	08.04.	-
∑ (tn-8°C	32,1	58,3	51,2	42,2
Vegetation phase	Flowering 30%	White button	White button	-
II EGG				
Date of appearance	06.05	28.04	18.04	-
∑ (tn-8°C	56.9	115,3	93,7	88,6
Vegetation phase	Petal fall 25%	Petal fall 10%	Petal fall 15%	-
III.LARVAE				
Date of appearance	18.05	08.05.	28.04	-
∑ (tn-8°C	131,6	148,9	172,3	150,9
Vegetation phase	Formed fruit	Formed fruit	Formed fruit	-

The beginning of ponta took place between early 18th April 2012 sand late 6th May 2010 having a medium effective temperature sum of 88,6°C and the appearance of larvae took place when there was registred a medium effective temperature sum of 150,9°C between 28th April 2012 and 18th May 2012.

In order to establish the optimum period for applying the control treatment a great importance represent the period between the appearance of adults, deposing of ponta and appearance of larvae (table 2).

Table 2.

The medium temperatures during the stages of *Hoplocampa minuta* Crist. in the fruit culture area Caransebes

Year	Adult		Egg		Larvae	
	Medium temperature (°C)	Pre-egg Deposing Period (days)	Medium temperature (°C)	Incubation period (days)	Medium temperature (°C)	Date of appearance
2010	10,1	13	11,7	12	20,1	18.05
2011	11,8	12	12,7	13	17,3	08.05
2012	12,7	11	12,9	12	18,0	06.05
Average	11,5	12	12,4	12,3	18,5	-

Out off the data presented in this table we can see that: the pre-egg deposition period for this pest is of 12 days, the first ponta took place at a medium temperature of 12,4°C and the incubation period was in average of 12,3 days. The medium temperature when the larvae appeared was of 18,5°C and maximum was of 20,1°C.

Phenologically, when the pest appeared in the years 2010-2012, the Anna Späth plum tree variety was in the white button phenophase and in 2010 it was during flowering when 30% of the flowers were in blossom.

Table 3

Dates of Anna Späth variety 's phenophases in the fruit culture area Caransebes

Year	Beginning of flovering	Petal fall period
2010	25.04.	03.05-12.05.
2011	20.04.	28.04.-10.05.
2012	12.04.	19.04-28.04.
Average	19.04.	19.04.-12.05.

Along the three years (table 3) the beginning of plum's flowering took place between 12th April and 25th April and the petal fall period started between 19th April and 3th May, as an average being considered the period between 19th April and 12th May.

CONCLUSIONS

Hoplocampa minuta Crist., in the orchards along the Bistra Valley, in the Caransebes fruit culture area, normally appear in the IInd and IIIrd decade of April, only in 2010 it happened to appear in the Ist decadev of April, when there is registered a medium temperature sum of 47,2°C.

The beginning of egg deposition takes place during the second half of April – beginning of May, when there is registered a medium effective temperature sum of 88,6°C, while 10-25% of the flower petals fall down.

The appearance of larvae takes place, excepting 2011, in the second half of May, when there is registred a medium effective temperature sum of 150,9°C., when the fruit is formed.

The beginning of flowering for the Anna Späth plum tree variety normally takes place in the IInd and IIIrd decades of April and the beginning of petal fall period took place in the second half of April – beginning of May.

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