

## MONITORING OF *RHAGOLETIS CERASI* L. THROUGH THE DECIS TRAP AT IAȘI-ROMANIA

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### Abstract

*Rhagoletis cerasi* (L.) is the main agent of damage to sweet cherry plantations. Found in all sweet cherry plantations, it is important for an integrated phytosanitary protection of the crop. The population dynamics in the Iasi area was monitored at different time intervals. The climatic conditions of the year and the biological reserve favored the appearance and development of the pest studied. The first catches were recorded on 12 May and the highest number of catches was recorded on 17 June 2020. Adult monitoring *Rhagoletis cerasi* (L.) was performed using "Decis Trap", an attractive trap containing ammonium carbonate, which attracts by its orange color and fights with the active substance deltamethrin providing a duration of protection of 5 months. The appearance and dynamics of pests have directly influenced the phytosanitary protection program. The observations were made during the vegetation period of the cherry plantation within the Research and Development Station for fruit growing in Iași in 2020.

Keywords: biological control, fruit, protection, sweet cherries, traps.

### 1. INTRODUCTION

Cherry fly, the main pest of cherry plantations is reported in Asia (8 countries), Europe (34 countries) and North America (CABI, 2021).

The attack of the pest *Rhagoletis cerasi* L. in cherry plantations determines the application of control measures to obtain a qualitative and quantitative harvest (S. Stamenkovic et al., 1996).

*Rhagoletis cerasi* L. is considered a pest that causes damage to fruit by depreciating it, becoming non-commercial given that the attack occurs when the fruit ripens.

With the help of the new Decis trap traps considered biological we can fight but also monitor the pest, representing the future in the fight against the pest. Biological control of pests is an important measure of integrated pest management.

### 2. MATERIALS AND METHODS

The research was carried out in 2020 in an experimental cherry plantation on the varieties Maria, Bucium, Tereza, aimed at the emergence of the pest *Rhagoletis cerasi* L. and its control with the help of new traps based on deltamethrin - decided trap.

In May, when the cherry was in the fruit-binding phenophase, a number of 5 traps were placed. Decis trap containing the active substance deltamethrin belongs to the chemical group of synthetic pyrethroids and acts by contact and ingestion on harmful insects both in the larval stage, as well as

in the adult one. The product has a shock effect and a variable duration of activity depending on local conditions. The principle behind which decidedly trap works is to attract and combat as many adult flies (females and males) in order to reduce the number of larvae below the economic threshold of damage during the period when the crop is highly susceptible. the trap contains an amount of 0.015 g / trap active substance.

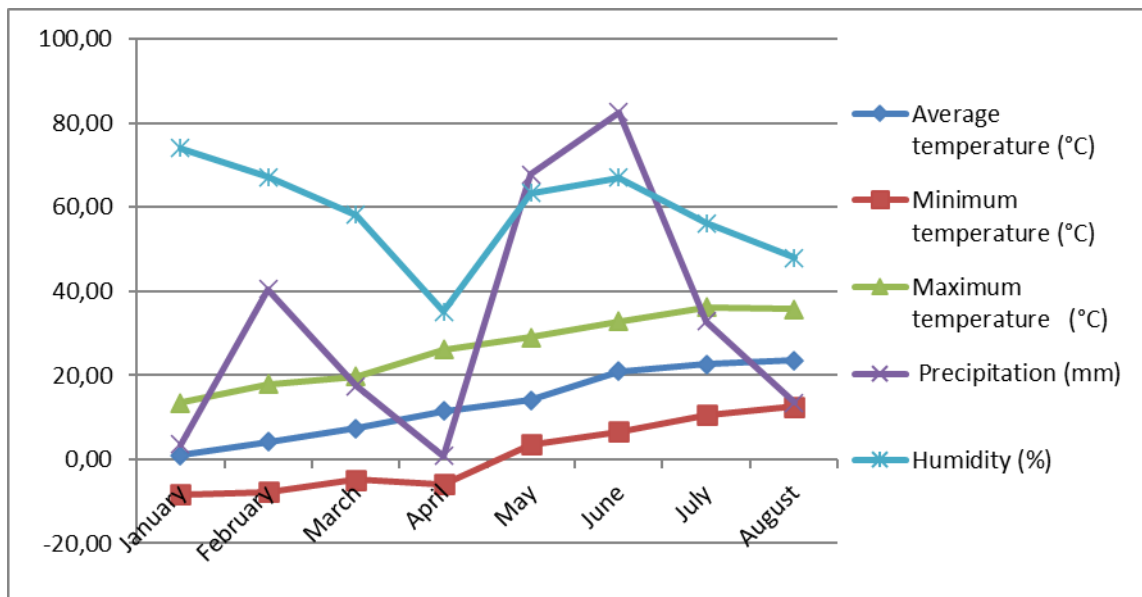


Figure 1. Climatic situation during the studied period

The climatological situation of the study period (fig. 1) is favorable for the growth and development of cherry plantations. The average temperature of the vegetation period was between 0.93 ° C and 23.57 ° C.

The temperature ranged from a low of -8.4 ° C to a high of 12.6 ° C. The summary of precipitation in the first half of the year is 258.8 mm, being below the average annual rainfall threshold of 700 mm. The humidity varied between the minimum of 35.07% in April and the maximum of 73.97% in January.

### 3. RESULTS AND DISCUSSIONS

Examining figure 3 in which we find the catches recorded in the analyzed period, the environmental conditions were favorable for the attack, characteristic of the warm spring contributing to the appearance in the first decade of May.

The first occurrence of the pest was recorded on May 12, and the highest number of catches was recorded on July 10 with a number of 24 insects. The number of catches was higher between June 9 and July 10 when the cherries were being harvested or even harvested. The number of catches was also influenced by the fact that no phytosanitary treatments were applied.



Figure 2. *Rhagoletis cerasi* L. captured with Decis trap at the flight start and maximum flight curve

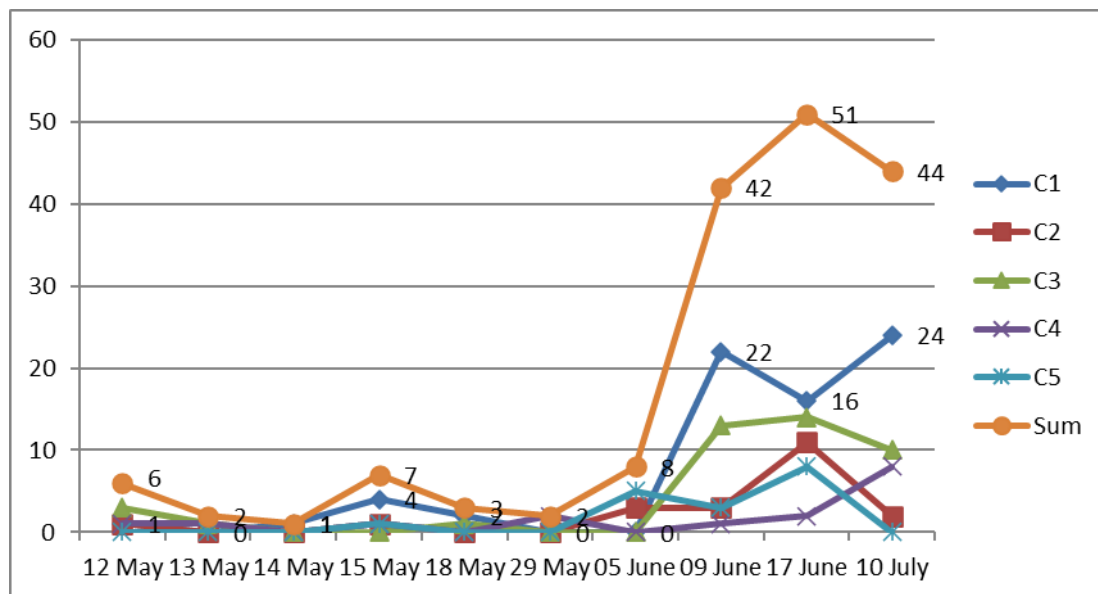


Figure 3. Monitoring the flight of the *Rhagoletis cerasi* L. cherry pest through DECIS Trap, SCDP IASI

Table 1. Treatment programme, 2020 at SCDP IASI

NO. TREATMENT PHENOPHASE	SPECTRUM OF COMBAT	PRODUCTS	CONCENTRATION %
Treatment 1 BBCH 53	<i>Quadraspidiotus perniciosus</i> , <i>Myzus cerasi</i> , <i>Panonychus ulmi</i> , <i>Monilinia sp.</i> , <i>Stigmia carpophylla</i> , <i>Coccomyces heimalis</i> .	<b>B. Bordelaise</b>	0.5%
		<b>Mospilan 20 SG</b>	0.03%
		<b>Polyactiv B</b>	0.1%
Treatment 2 BBCH 71	<i>Quadraspidiotus perniciosus</i> , <i>Myzus cerasi</i> , <i>Panonychus ulmi</i> , <i>Monilinia sp.</i> , <i>Stigmia carpophylla</i> , <i>Coccomyces heimalis</i> .	<b>Signum</b>	0.05%
		<b>Calypso 480 sc</b>	0.02%
		<b>Polyactiv B</b>	0.1%
Treatment 3 BBCH 81	RHAGOLETIS T1- <i>Myzus cerasi</i> , <i>Panonychus ulmi</i> , <i>Monilinia sp.</i> , <i>Stigmia carpophylla</i> , <i>Coccomyces heimalis</i> .	<b>Folicur solo</b>	0.075%
		<b>Rezistevo</b>	0.4%
		<b>Decis 25 wg</b>	0.004%
Treatment 4 BBCH 85	RHAGOLETIS T2- <i>Myzus cerasi</i> , <i>Panonychus ulmi</i> , <i>Monilinia sp.</i> , <i>Stigmia carpophylla</i> , <i>Coccomyces heimalis</i> .	<b>Topsin 70 wdg</b>	0.07%
		<b>Calypso 480 sc</b>	0.02%
		<b>Rezistevo</b>	0.3%

#### 4. CONCLUSIONS

The climatic conditions of the year favored the appearance of pests in the cherry plantations of the studied area. Prevention and control methods have helped to limit the pest threshold. The application of phytosanitary treatments had a very important role in the number of catches recorded so that towards the end of the insecticide coverage period the flight curve intensified, registering a maximum number of 24 catches per trap.

#### 5. REFERENCES

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