RESEARCH CONCERNING THE ATTACK BY *PHYLLOXERA VASTATRIX* PLANCHON ON VINE IN THE TIMIŞ COUNTY IN 2007

CERCETĂRI PRIVIND ATACUL DE *PHYLLOXERA VASTATRIX* PLANCHON (FILOXERA) LA VIŢA DE VIE ÎN JUDEŢUL TIMIŞ ÎN ANUL 2007

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Abstract: *Phylloxera is the most damaging vine pest in Europe and Western United States, and damage is more important in newly-planted vineyards than in 10-year old ones. There are also differences in tolerance or resistance between the species; therefore, Vitis vinifera is very sensitive to the attack of the root form, but its leaves are resistant, while the American species Vitis viparia does not allow a large number of galls on its leaves, but is resistant to the root form. But, if foliar infestation is not too high, it has no economic effect whatsoever on the vines or quality and quantity of wine produced from the vine. The goal of research was to monitor and point out the attack degree of the species Phylloxera vastatrix, a quarantine pest A_2 of the OEPP and Apothem studies were carried out on vine nurseries, mother-plantations, and port-graft plantations in the Timiş County, between April and August 2007, together with the Phyto-Sanitary Unit of Plant Protection of the Timiş County. In order to identify the characteristic symptoms on the leaves, the control was done randomly, all during the vegetation period, starting from the end of April and the beginning of May. As a result of research, we could note a medium attack by phylloxera, the gall form and with no root form whatsoever, in the Timiş County; we issued warning bulletins in problem areas and we recommended the use of resistant graft-carriers.*

Rezumat: *Filoxera este cel mai păgubitor dăunător al viţelor în Europa şi în vestul Statelor Unite, iar daunele sunt mai importante în podgoriile nou plantate decât în cele vechi de 10 ani. [1]. Există, de asemenea, diferenţe mari de toleranţă sau de rezistenţă între specii, prin urmare Vitis vinifera este foarte sensibilă la atacul formei radicicole, dar frunzele sale fiind rezistente; în timp ce specia americană Vitis viparia nu suportă prezenţa unui număr mare de gale pe frunzele sale, dar rezistă la atacul formei radicicole. [2]. Însă, dacă infestările foliare nu sunt prea mari, nu prezintă niciun efect economic asupra viţelor, ca şi asupra calităţii sau cantităţii de vin produs din acestea. Scopul cercetărilor a fost monitorizarea şi evidenţierea gradului de atac al speciei Phylloxera vastatrix, cunoscută ca fiind un dăunător de carantină A_2 al OEPP şi NAPPO. Studiile au fost realizate în şcoli de viţă, plantaţii mamă şi plantaţii portaltoi din judeţul Timiş, în perioada aprilie-august 2007, împreună cu Unitatea Fitosanitară de Protecţia Plantelor Timiş. Pentru depistarea simptomelor caracteristice pe frunze, controlul s-a efectuat randomizat, pe tot parcursul vegetaţiei începând de la sfârşitul lunii aprilie – începutul lunii mai. În urma cercetărilor, s-a constat un atac mijlociu de filoxeră, forma galicolă şi absentă forma radicicolă, în judeţul Timiş; au fost emise buletine de avertizare în zonele cu probleme şi au fost recomandate utilizarea de port-altoi rezistenţi sau fumigarea suşelor de viţă cu bromură de metil sau hexaclorbutadienă.*

Key words: *vine, attack, phylloxera*
Cuvinte cheie: *viţa de vie, atac, filoxera*

INTRODUCTION

Phylloxera is original from North America; it appears in Europe for the first time in 1863, in England, in the greenhouses around London, and in France (Pujault and Bordeaux).

In Romania, it was signalled in 1884, in the Dealul Mare vineyards, from where it spread in all vineyards in the country.

This species has four forms, i.e.: gallicol, radicicle, sexuparous, and sexuated.

The gallicol form attacks the tip leaves. After it punches and sucks the cell juice, on the underside of the leaf appear galls under the form of irregular urns the size of a pea. At first, galls are yellowish-greenish, and then brownish. On a single leaf there may be 15-30 galls. As a result of attack, leaf metabolism is low, which prevents shoot wood from maturing.

The attack by the gallicol form is of importance for port-graft plantations, with poor quality results.

The presence or the absence of the gallicol form depends on numerous forms, among which soil and environment.

MATERIALS AND METHOD

The studies were carried out on vine nurseries, mother-plantations, and port-graft plantations in the Timiş County (ex. S.C. Agricola Pădureni), between April and August 2007, together with the Phyto-Sanitary Unit of Plant Protection of the Timiş County. In order to identify the characteristic symptoms on the leaves, the control was done randomly, all during the vegetation period, starting from the end of April and the beginning of May.

RESULTS AND DISCUSSION

From the previous years, we have inherited a large amount of *Phylloxera* (the gallicol form) since they did not collect all the infested leaves in the fall of 2006. They know that the last sexuated generation lays winter eggs and leaves infested by *Phylloxera* remain on the plant for a longer period of time; as a result, vineyard plantations would need supplementary maintenance works, meant to prevent *Phylloxera* attack.

Table 1

Assessing attack by *Phylloxera vastatrix* in the Timiş County (2007)

Time of sampling	Number of samples										Mean
	R1 %	R2 %	R3 %	R4 %	R5 %	R6 %	R7 %	R8 %	R9 %	R10 %	
15.May.2007	5	17	15	10	19	21	19	18	19	23	**16.6**
10.Julie.2007	13	23	19	22	27	28	30	22	26	35	**24.5**
28.August.2007	22	29	23	26	28	32	30	25	29	38	**28.2**
											23.1

As a result of research, we could see (Table 1) that they did not apply properly chemical treatments for the prevention and control of the gallicol form; this is why the 2006 reserve was pretty large, and in May, when they made the first measurements, there were large amounts of leaves attacked (16.6%) by the gallicol form of *Phylloxera*.

In the following two measurements, in July and August respectively, the percentage of attacked leaves increased on the average to 24.5% and 28.2%, respectively. (figure 2).

After about two months from the first measurement, the percentage of attacked leaves increased with about 7.9% (on July 10, 1007), and three months after the first control, the percentage increased with 11.6% leaves attacked (on August 28, 2007).

The high percentage of leaves attacked had a negative impact on the maturation of the shoots, on deformation, and on small grape bean clusters with low sugar content.

Fig.1. Attack leave by Phylloxera vastatrix, gallicol form

Since the mean of the three measurements being 23.1%, the attacked leaves point to a medium attack by *Phylloxera vastatrix*, the gallicol form. (figure 1).

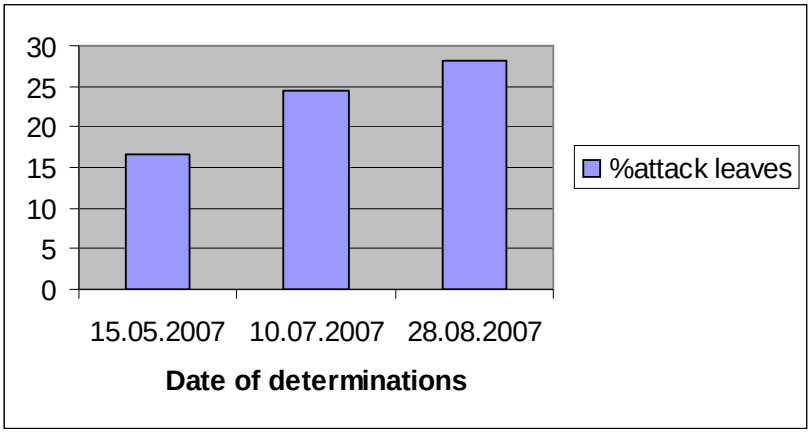

Fig.2. The percentage of attacked leaves

CONCLUSIONS

We could note a medium attack by phylloxera, the gall form and with no root form whatsoever, in the Timiş County.

We issued warning bulletins in problem areas and we recommended the use of resistant graft-carriers.

In the fall of 2007, there was still a large reserve of Phylloxera of the gallicol form. The winter was soft; as a result, winter eggs remained viable.

In 2008, the attack by *Phylloxera vastatrix* (the gallicol form) will be much above the average (strong or very strong) in the studied areas, if they do not apply treatments in due time, in proper conditions, and with specific products. Grape production will be low and of poor quality, endangering the production of 2009 with quick debilitation and repeated drying of the stems.

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