

## MONITORING OF METCALFA PRUINOSA SPECIES (HOMOPTER: FULGOROIDEA) IN THE CENTRAL AREA OF OLTENIA

MITREA ION

University of Craiova, e-mail : e-mail: mitreaion@gmail.com

<sup>2</sup> University of Craiova, Faculty of Horticulture

**key words:** *Metcalfa pruinosa* Say., monitoring, attack

### ABSTRACT

In recent years, the invasive species *Metcalfa pruinosa* Say 1830 has become the main pest of the different herbaceous or woody ornamental plant species encountered in various green areas of Craiova (N. Romanescu Park, Al. Buia Botanical Garden, Sfântul Dumitru Park, English Park).

The attack of this pest on a variety of ornamental plants can be easily confused with the attack of wool lice.

Starting from the population density as well the aggression attack of the species *Metcalfa pruinosa* recorded in the previous year, we proposed in 2017 the monitoring of the pest population as well the incidence of the attack in the green areas from the studied habitats.

### INTRODUCTION

The invasive species *Metcalfa pruinosa* Say 1830 originates from southern North America from where it rapidly spread in USA and then in Mexico and Cuba, subsequently, in many european states as: Italy (Zangheri S and Donadini P, 1980), France (Della Giustina, 1987), Spain (Pons et al., 2002), Slovenia (Sivic, 1991), Switzerland (Jermine et al., 1995), Great Britain (Malumphy et al., 1994), Austria (Holzinger et al., 1996), Croatia (Alma, 2000), Czech Rep., 2001 (Lauterer, 2002), Greece 2002 (Drosopoulos et al., 2004), Montenegro (Hrncic, 2003), Turkey (Karsavuran and Guclu, 2004), Hungary (Orosz and Der, 2004), Bulgaria (Tomov et al., 2006), Serbia 2006 (Ljubodrag, 2007), Bosnia and Hertzegovina (Gotlin Culjak et al., 2007), the Netherlands (Strauss, 2009), Romania 2009 (Cristina Preda, M. Skolka, 2009;)

### MATERIAL AND METHOD

The monitoring of *Metcalfa pruinosa* species from some of Craiova town parks has been done during 2017 on the vegetation period of plants (April-October).

The observations and determinations have been made on different herbaceous or woody ornamental plant species from different zones of Craiova town (N. Romanescu park, Botanic Garden Al. Buia, Sfantul Dumitru park, English park) where the pest has been seen.

This species has been reported by Mitrea I. In parks from Craiova town in 2016.

The aim of researches was the identification of the presence of this pest on host plants and the incidence of the attack during the vegetation period.

Taking account of the numerical density of the population of *Metcalfa pruinosa* that was recorded on a large group of host plants as well as the aggressivity of attack there were made researches in parks from Craiova town.

### RESULTS AND DISCUSSIONS

The monitoring of the invasive species *Metcalfa pruinosa* has been done on a group species of plants in the parks, public gardens and green fences from Craiova town during April-October period, the vegetation time of most ornamental plants.

From the analysis of recorded data, in 2017 there can be noticed that the *Metcalfa pruinosa* species was present on a numerous group of herbaceous or woody cultivated or spontaneous plants where the attack was seen on young shoots of the host plants (table 1).

**Table 1**

**The occurrence of *Metcalfa pruinosa* species attack in some parks from Craiova town in 2017**

The occurrence of attack produced by the species Host plant	The occurrence of the attack (F%)			
	English Park	"Sf. Dumitru" park	Botanic Garden	"Nicolae Romanescu" park
<b>Species of woody plants</b>				
<i>Hibiscus syriacus</i>	10	10	12	10
<i>Cornus sanguinea</i>	2	5	15	15
<i>Buxus sempervirens</i>	1	2	10	7
<i>Symphoricarpos albus</i>	-	-	5	-
<i>Forsythia intermedia</i>	-	10	12	10
<i>Rosa spp.</i>	2	6	10	11
<i>Tamarix tetrandra</i>	-	5	-	-
<i>Acer negundo</i>	-	6	8	10
<i>Rhus hirta</i>	-	10	10	12
<i>Ligustrum vulgare</i>	-	4	6	8
<i>Philadelphus coronarius</i>	-	-	5	7
<i>Thuja occidentalis</i>	-	-	1	1
<i>Rosa canina</i>	-	-	10	10
<i>Malus domestica</i>	-	-	20	-
<i>Rhododendron spp.</i>	-	-	1	-
<i>Paulownia tomentosa</i>	-	-	30	25
<i>Ulmus glabra cv. pendula</i>	-	-	10	10
<b>Robinia pseudacacia</b>	-	-	5	5
<i>Rubus fruticosus</i>	-	-	10	10
<i>Morus alba</i>	-	-	5	6
<b>Salix alba</b>	-	-	2	3
<b>Herbaceous species</b>				
<i>Yucca filamentosa</i>	-	15	30	30
<i>Sonchus arvensis</i>	-	-	25	30
<i>Dianthus chinensis</i>	-	-	15	12
<i>Helianthus tuberosus</i>	-	-	2	1
<i>Calendula officinalis</i>	-	-	20	10
<i>Cirsium arvense</i>	-	-	50	30
<i>Taraxacum officinale</i>	-	-	25	30
<i>Lamium purpureum</i>	-	-	5	10
<i>Trifolium pratense</i>	-	-	5	5
<i>Lycopus europaeus</i>	-	-	5	6
<i>Amaranthus retroflexus</i>	-	-	-	5
<i>Plantago lanceolata</i>	-	-	10	15

The observations and determinations on the monitoring of the invasive species *Metcalfa pruinosa* have been made in different parks of Craiova town: N. Romanescu park, Botanic Garden Al. Buia, Sfantul Dumitru park, English park.

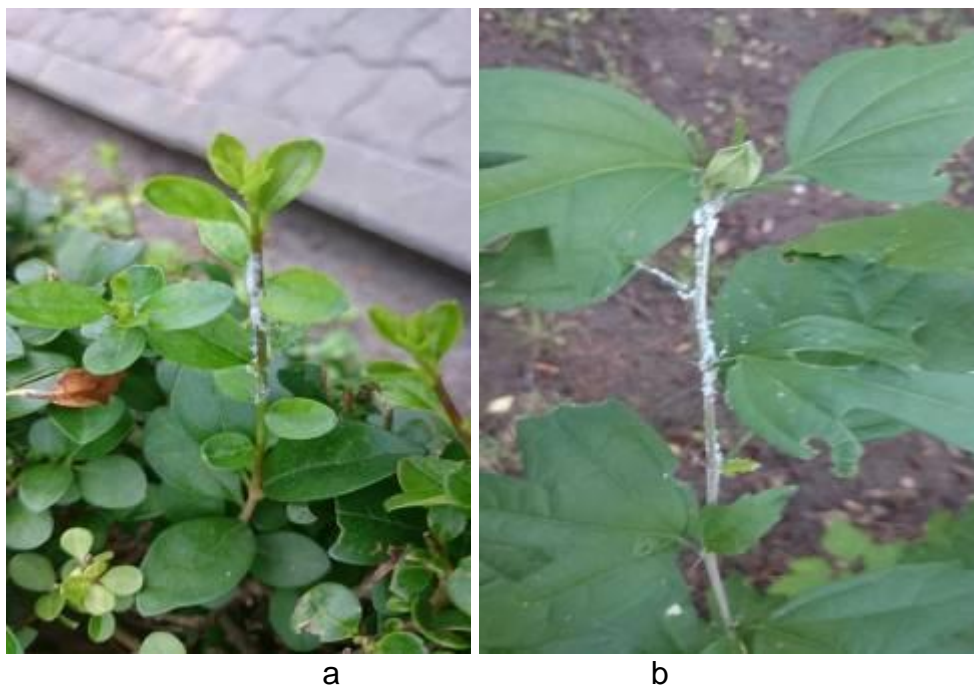
The presence of the pest has been reported from the third decade of April on young shoots of ornamental shrubs from green fences, at the beginning the plants of *Hibiscus syriacus* and *Cornus sanguinea* from parks and public gardens taken in study; from these plants the pest spreaded on different host plants.

The aggressivity of this pest varied in function of the researched habitat and the host plant. Such way, the occurrence of the attack has had different values, of 1-10% (on 4 host plants, fig. 1a, 1b) from *English park*, of 2-15 % (on 10 species of host plant, fig. 2a, 2b) from

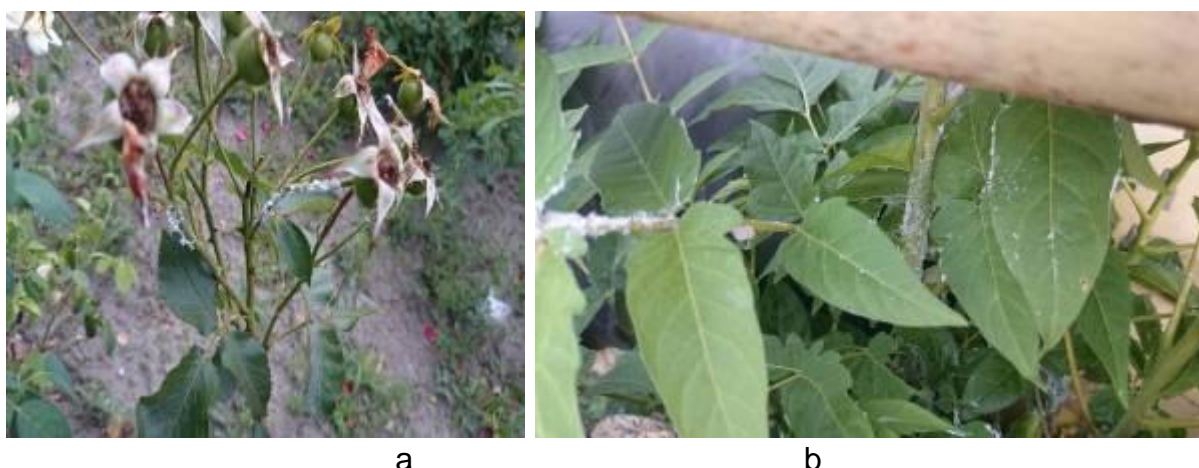
“Sf. Dumitru” park, 1-50% (on 32 species of host plant, fig. 3a, 3b) from *Botanic Garden* „Al. Buia” and of 1-40% (on 29 species of host plants, fig. 4a, 4b) from *Nicolae Romanescu park*.

After an analysis of the attack in function of the host plant, there can be noticed a higher occurrence, of 1-50% on herbaceous plants and of 1-30% on woody plants.

The results obtained on the attack produced on different host plants (spontaneous or cultivated) confirm data reported by different authors (Duso and Pavan, 1987; Bagnoli and Lucchi, 2000; Pons et al., 2002; Mead F.W., 2004; Cristina Preda and M. Skolka, 2009 and 2011; Yeyeun Kim and colab. 2011, Alina Goga et al., 2011; Mitrea, 2016), being reported about 200 host plant species.

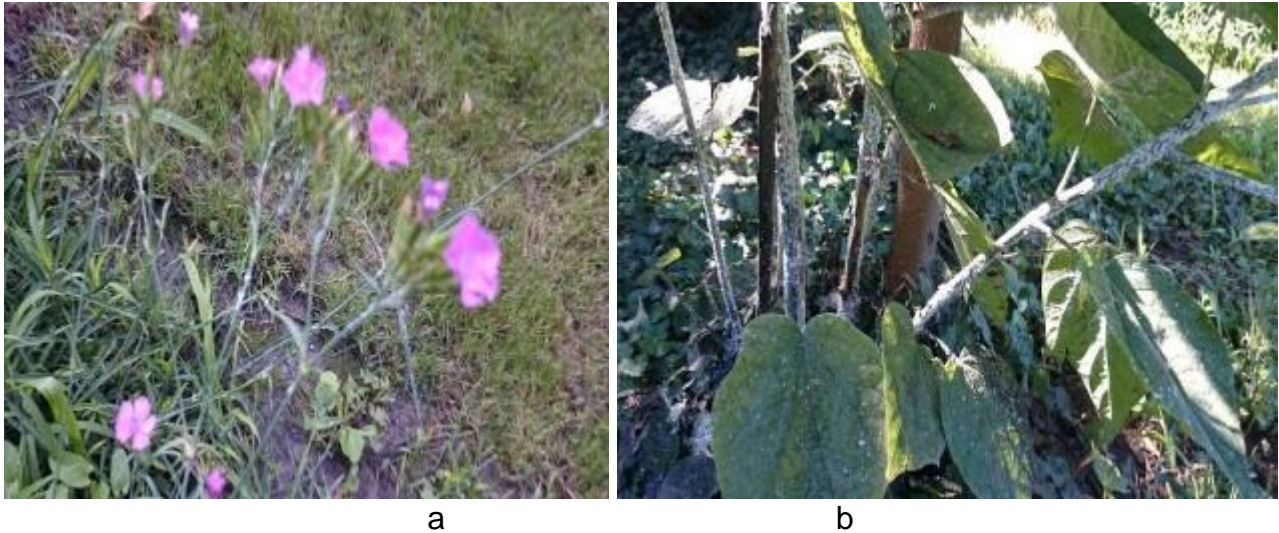


**Fig. 1. *Metcalfa pruinosa*: a. attack on *Buxus sempervirens*  
b. attack on *Hibiscus syriacus***



**Fig. 2. *Metcalfa pruinosa*: A. attack on *Rosa spp.*  
b. attack on *Rhus hirta***





**Fig. 3. *Metcalfa pruinosa*: a. attack on *Dianthus chinensis*  
b. attack on *Paulownia tomentosa***



**Fig. 4a. *Metcalfa pruinosa*: a. attack on *Cirsium arvense*  
b. attack on *Yucca filamentosa***

### CONCLUSIONS

The monitoring of the invasive species *Metcalfa pruinosa* was made on different host plant species from parks and public gardens from Craiova town during April-October period, during the vegetation period.

The aggressivity of this pest was different in function of the researched habitat and the host plant.

The occurrence of the attack in function of the host plant has had a higher frequency, of 1-50% on herbaceous species than 1-30% on woody ones.

## BIBLIOGRAPHY

1. **Della Giustina W., 1987** - *Metcalfa pruinosa* (Say 1830), nouveauté pour la Faune de France (Hom.: Flatidae). Bull. Soc. Ent. Fr., 91: 89-92.
2. **Gogan Alina, Grozea Ioana Virteiu , Ana Maria, 2010**, *METCALFA PRUINOSA SAY* (INSECTA: HOMOPTERA: FLATIDAE) – First occurrence în western part of Romania. Research Journal of Agricultural Science, 42 (4), 2010, pp. 63-67.
3. **Gotlin Čuljak, Tanja, Ostojić Ivan, Skelin Ivan, Grubišić Dinka, Jelovčan Siniša, 2007**, *Metcalfa pruinosa* (Say, 1830) (Homoptera: Flatidae), Potencijalno opasan štetnik u novim područjima. Entomol. Croat. 2007, Vol. 11. Num. 1-2: 75 – 81.
4. **Yeyeun Kim, Minyoung Kim , Ki-Jeong Hong, Seunghwan Lee, 2011**, Outbreak of an exotic flatid, *Metcalfa pruinosa* (Say) (Hemiptera: Flatidae), in the capital region of Korea. Journal of Asia-Pacific Entomology, Volume 14, Issue 4, December 2011, Pages 473–478.
5. **Lauterer P., 2002** - *Citrus Flatid Planthopper - Metcalfa pruinosa* (Hemiptera: Flatidae), a New Pest of Ornamental Horticulture in the Czech Republic. Plant Protection Science, 38:145-148.
6. **Mitreă I., 2016**, *Metcalfa Pruinosa* (Homoptera: Fulgoroidea), new and dangerous pest for lawn in Oltenia. Analele Universitatii din Craiova, Seria Biologie, Horticultura, Tehnologia prelucrării produselor agricole, Ingineria mediului in agricultura, XXI (LVII), pp. 573-578.
7. **Pons X., Lumbierres B., Garcia S., Manetti P.L., 2002** - *Metcalfa pruinosa* (Say) (Homoptera: Flatidae), una plaga potencial de plantas ornamentales en espacios verdes urbanos de Cataluña?. Bol. San. Veg. Plagas, 28: 217-222.
8. **Preda Cristina, Skolka M., 2009**, Prima semnalare a unei noi specii străine invazive în Constanța - *Metcalfa Pruinosa* (Homoptera: Fulgoroidea). Lucrările Simpozionului Mediul și agricultura în regiunile aride, Prima ediție. Editura ESTFALIA București 2009, pag. 141-146.
9. **Preda Cristina, Skolka M., 2011**, Range Expansion of *Metcalfa pruinosa* (Homoptera: Fulgoroidea) in Southeastern Europe. Ecologia Balkanica, Vol. 3, Issue 1, pp. 79-87.
10. **Mead F.W., 2004** - *Citrus flatid planthopper - Metcalfa pruinosa* (Say), Original published as DPI Entomology Circular 8S:1-2, University of Florida, 1969.