

MONITORING OF THE SPOTTED-WING DROSOPHILA (*DROSOPHILA SUZUKII* Matsumura) IN ROMANIA

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INTRODUCTION

- ❖ The Spotted Wing Drosophila *Drosophila suzukii* Matsumura (Diptera, Drosophilidae) is an invasive Asian vinegar fly, which since 2008 has established in western European countries as a major pest of healthy soft skinned fruits including raspberries, blackberries, grapes, cherries, blueberries;
- ❖ First adults of *D. suzukii* were found in Romania in September 2013 in a Tephri Trap with Biolure (3 components: trimethylamine, ammonium acetate, putrescine) placed on wild blackberry bushes in an area in Baneasa area in northern part of Bucharest city (Southern Romania).
- ❖ The following years after its detection, field monitoring activities have been continued in order to evaluate the fly presence and potential for spreading as well as elements of its biology in our country.

METHODS

- ❖ During the period 2014-2021, traps (0.5 l plastic bottles) with a mixture of apple vinegar and red wine were used, hung in various orchards, in trees in private gardens from urban and rural areas, near fruit markets, parks and botanical gardens in areas from north-west, south-west, south and east of the country;
- ❖ Samples of wild and cultivated fruit collected from August to November were reared in laboratory and examined for the insect presence;
- ❖ The population dynamics of *D. suzukii* in Baneasa (Bucharest) area was performed every year.

RESULTS

- ❖ Through the monitoring period, the adults of Spotted-Wing Drosophila were detected in areas from North-West, South-West, South and East of Romania as it is showed in fig 1.
- ❖ Adults were captured in the traps baited with apple vinegar and red wine, but also in Tephri type traps used in detecting the presence of Mediterranean fruit fly *Ceratitis capitata*, placed in plum and apple orchards, grapevine, wild and cultivated blackberry bushes, fig, jujube and various fruit trees in private gardens from urban and rural areas, near fruit markets, parks and botanical gardens;
- ❖ No adults were collected in the traps on the sweet and sour cherry orchards during the spring and summer seasons;
- ❖ The dynamics of the adults of *D. suzukii* in traps in the R-D Plant Protection Institute perimeter in Baneasa (Bucharest) was performed every year from 2014 to 2021 (figure 2);
- ❖ The dynamics of captures of *D. suzukii* in a trap in the Botanical garden of Horticulture University in Baneasa Bucharest in 2020-2021 is showed in figure 3;

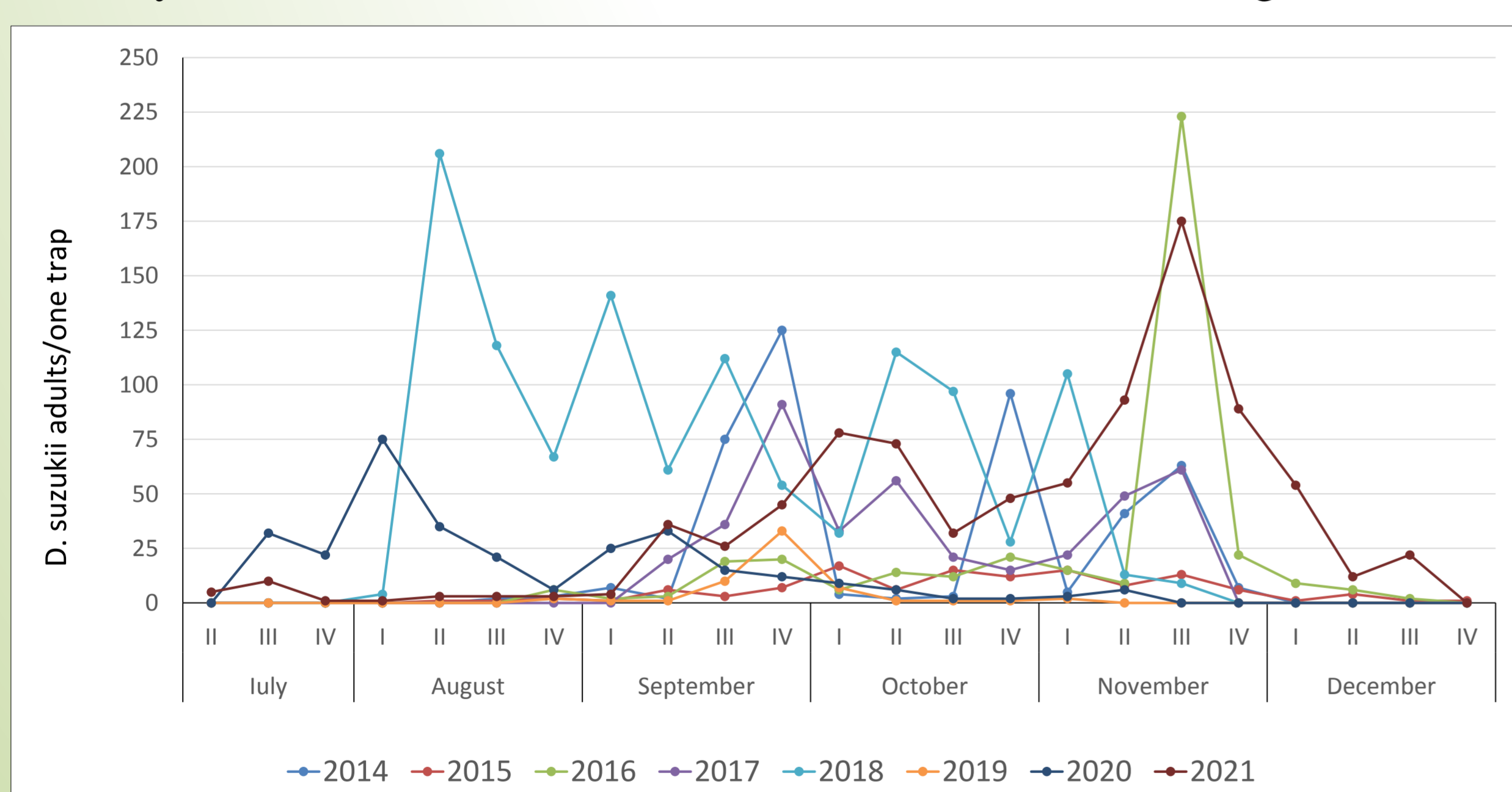


Figure 2:
 Dynamics of adults of *D. suzukii* monitored in RDIPP Bucharest area

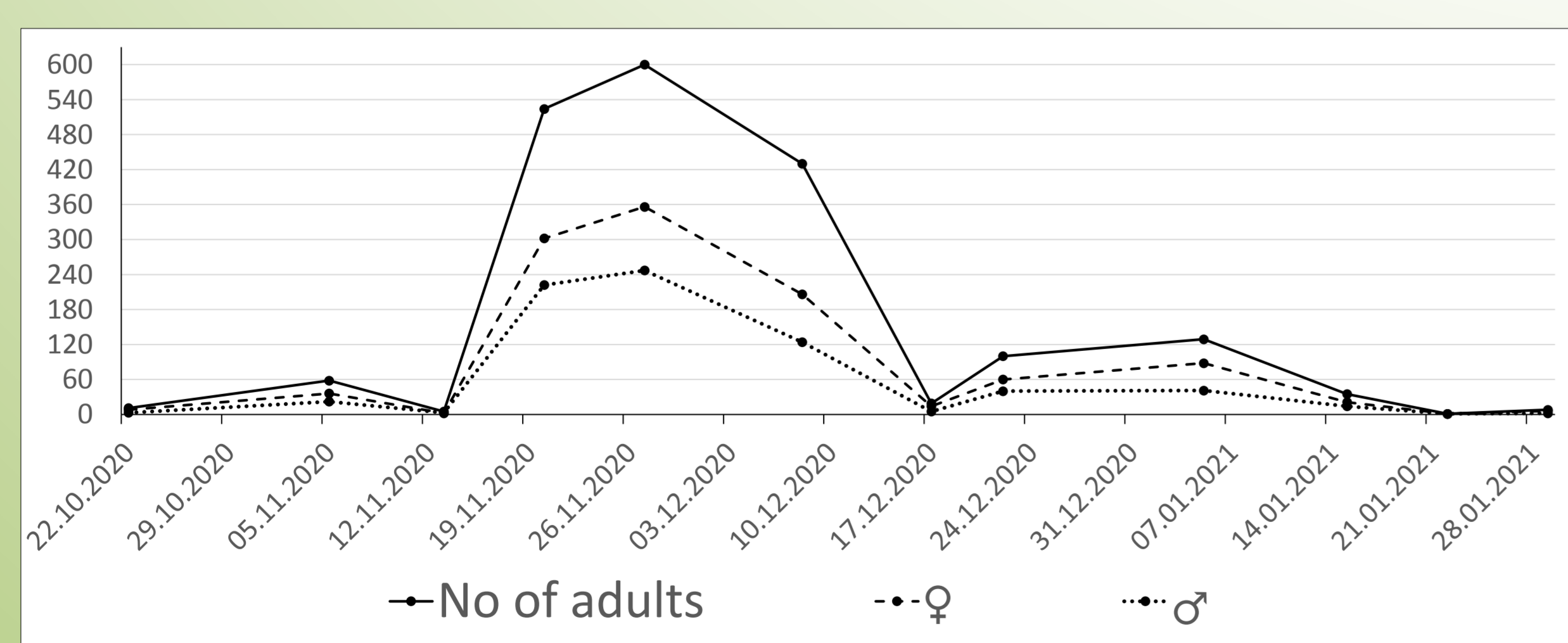
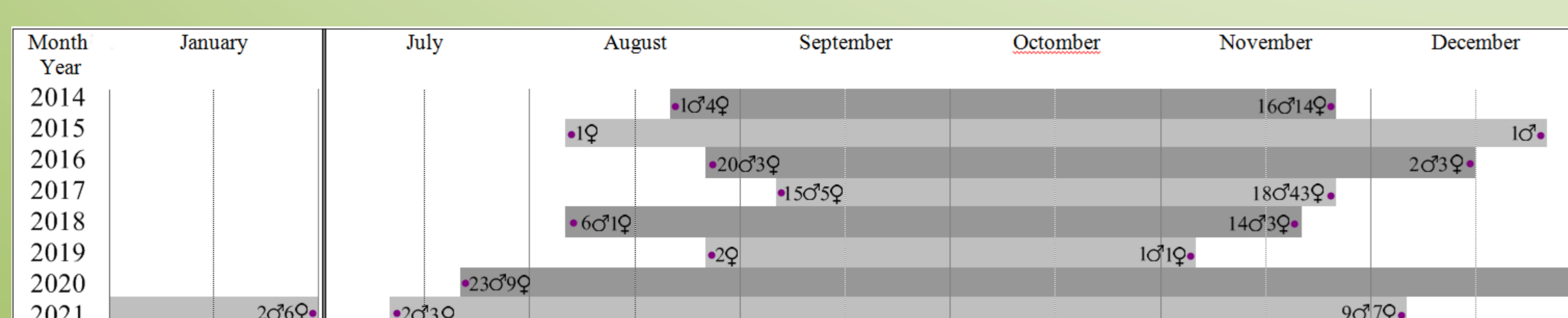


Figure 3:
 Dynamics of adults of *D. suzukii* in Horticulture University area (one trap)



- ❖ The period and duration of *D. suzukii* adults activity in Baneasa area in Northern part of Bucharest city varied from year to year. The first adults in traps were recorded in July for two years (2020, 2021), in August for five years (2014, 2015, 2016, 2018) and in September in 2017. The last captures were in generally in November (2014, 2017, 2018, 2019) and in December (2015, 2016 and 2021). Only in 2020 the adult captures was extended to January 2021.



D. suzukii adults captured in a trap baited with apple vinegar and red wine, placed on *Rubus fruticosus*



Figure 1: Presence of *D. suzukii* in Romania in period of 2015-2021

Table 1: Fruit samples evaluated for emergence of *D. suzukii* adults in 2014-2021

Fruits species collected	Common name	presence/absence
<i>Rubus caesius</i>	Wild blackberry	✓
<i>Rubus fruticosus</i>	Cultivated blackberry	✓
<i>Phytolacca americana</i>	American pokeweed	✓
<i>Sambucus ebulus</i>	European dwarf elder	✓
<i>Parthenocissus quinquefolia</i>	Five-leaved ivy	x
<i>Mahonia aquifolium</i>	Oregon grape	x
<i>Ligustrum vulgare</i>	European privet	x
<i>Berberis vulgaris</i>	European barberry	x
<i>Cotoneaster dammeri</i>	Bearberry cotoneaster	x
<i>Pyracantha coccinea</i>	Scarlet firethorn	x
<i>Elaeagnus multiflora</i>	Cherry elaeagnus	x
<i>Crataegus monogyna</i>	Common hawthorn	x
<i>Prunus spinosa</i>	Blackthorn	x
<i>Prunus mahaleb</i>	Mahaleb cherry	x
<i>Ziziphus jujuba</i>	Chinese date	x
<i>Symphoricarpos albus</i>	Common snowberry	x
<i>Mespilus germanica</i>	Common medlar	x
<i>Rosa canina</i>	Dog rose	x
<i>Vitis vinifera</i>	Common grape vine	x
<i>Ficus carica</i>	Common fig	✓

- ❖ Adults of *D. suzukii* have been emerged in laboratory conditions from the fruit samples of wild blackberry (*Rubus caesius*), European dwarf elder (*Sambucus ebulus*), American pokeweed (*Phytolacca americana*), cultivate blackberry (*Rubus fruticosus*) and fig (*Ficus carica*).
- ❖ The only association of the fly with major damage to fruit was in the case of a crop of blackberry *R. fruticosus* in 2020 in a location in the south of the country.