

**ON THE RESPONSE OF SOME APPLE-TREE CULTIVARS TO THE  
ATTACK BY *PODOSPHAERA LEUCOTRICHA* (ELL ET EV.) SOLOMON IN  
THE CLIMATE CONDITIONS OF THE D.E.S. IN TIMIȘOARA IN 2008**

**COMPORTAMENTUL UNOR SOIURI DE MĂR FAȚĂ DE CIUPERCA  
*PODOSPHAERA LEUCOTRICHA* (ELL ET EV.) SOLOMON ÎN CONDIȚIILE  
CLIMATICE ALE ANULUI 2008 LA S.D.E. TIMIȘOARA**

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**Abstract:** *In this paper we present the response of 5 apple-tree cultivars (Romus 2, Pionier, Jonathan, Delicios de Voinești and Florina) to the attack by *Podosphaera leucotricha* (Ell et Ev.) Solomon in the climate conditions of the year 2003. Measurements were made on the intensive plantation of the D.E.S. in Timișoara. From a climate point of view, the year was very favourable to the development of the fungus.*

**Rezumat:** *Lucrarea prezintă comportarea a 5 soiuri de măr (Romus 2, Pionier, Jonathan, Delicios de Voinești and Florina) la atacul ciupericii *Podosphaera leucotricha* (Ell et Ev.) Solomon în condițiile climatice ale anului 2003. Determinările s-au făcut plantația intensivă de meri a SDE Timișoara. Din punct de vedere climatic anul a fost foarte favorabil dezvoltării ciupericii.*

**Key words:** *apple, *Podosphaera leucotricha**  
**Cuvinte cheie:** *măr, *Podosphaera leucotricha**

### **INTRODUCTION**

The agricultural year 2008 was, from a climate point of view, was a favourable year for agricultural crops due to the amounts of rainfall and of atmospheric moisture, which were above most multi-annual averages, and to favourable temperatures. Moisture and rainfall favoured at the same time foliar diseases. The 5 treatments with fungicides applied in the orchard compared to the number of treatments recommended (14 – 17), justifies measurements.

### **MATERIAL AND METHOD**

We studied the apple-tree cultivars Romus 2, Pionier, Jonathan, Delicios de Voinești and Florina. The apple-trees were grafted on mother-plants M26, which gives them a small size, suited for intensive orchards. The experiment was organised in 3 replications and in one of them we monitored 3 trees. On each tree we monitored with the help of 4 levels (2 superior ones and 2 of the inferior ones).

We assessed frequency (F%) and intensity (I%), and we calculated attack degree after classical formulas. We did the classification per 7 intensity classes (0-6). Results were compared to the average of the experiment and processed with statistical calculus of limit differences.

### **RESULTS AND DISCUSSION**

Results of experimental measurements concerning attack frequency (F%) by *Podosphaera leucotricha* (Ell. et Ev) Slam f.c. *Oidium farinosum* Cke. compared to the average of the experiments are shown in Table 1 and in Figure 1.

Table 1.

Attack frequency (F %) by *Podospaera leucotricha* (Ell. et Ev) Slam f.c. *Oidium farinosum* Cke. in the climate conditions of the year 2008, compared to the experimental average

Experimental average	Replication			Average	%	Difference to control	Significance
	R1	R2	R3				
Jonathan	95,84	99,65	99,2	98,23	127,78	-21,35	ooo
Florina	70,53	69,35	71,53	70,47	91,67	6,41	**
Pionier	75,25	77,56	78,65	77,15	100,36	-0,28	-
Romus	77,34	76,85	72,35	75,51	98,23	1,36	-
Delicios de Voinești	63,75	61,8	63,5	63,02	81,97	13,86	***
Experimental average	76,54	77,04	77,04	76,88	100,00	0,00	-

DL5% = 3,33; DL1% = 4,75; DL0,1% = 6,62

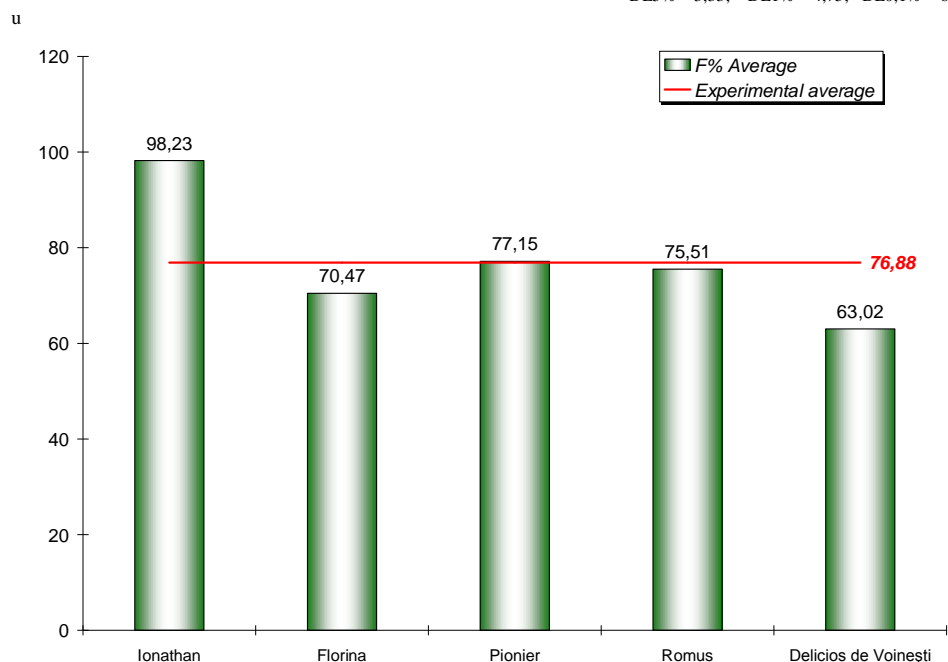


Figure 1. Attack frequency (F %) by *Podospaera leucotricha* (Ell. et Ev) Slam f.c. *Oidium farinosum* Cke. in the climate conditions of the year 2008, compared to the experimental average

Figure 1, show the fact that, though the differences calculated vary between -21,73 in the Jonathan cultivar and 13,86 in the Delicios de Voinești cultivar, only the Jonathan cultivar has a value of -21, 37 within the negative significance range (very insignificant), which recommends it as a very sensitive cultivar to fungus attack. In the Pionier cultivar, though the difference to the control is negative (-0,28), statistical ensurances do not show significance. The calculated difference in the Florina cultivar was 6,41 and it si a distinctly positive difference.

The cultivars Florina with a difference of 6,41 and Delicios de Voinești with 13, 86 was significant positive, which makes them the most resistant cultivars to the attack by *Podospaera leucotricha*.

Experimental data concerning attack intensity (I %) by *Podosphaera leucotricha* (Ell. et Ev) Slam f.c. *Oidium farinosum* Cke. compared to the experimental average are shown in Table 2 and in Figure 2.

Table 2.  
Attack intensity (I %) by *Podosphaera leucotricha* (Ell. et Ev) Slam f.c. *Oidium farinosum* Cke. in the climate conditions of the year 2008 compared to the experimental average

Experimental average	Replication			Average	%	Difference to control	Significance
	R1	R2	R3				
Jonathan	4,95	5,85	5,26	5,35	145,76	-1,68	ooo
Florina	3,38	4,2	4,65	4,08	111,00	-0,40	-
Pionier	4,58	4,98	4,85	4,80	130,78	-1,13	ooo
Romus	3,55	3,38	3,83	3,59	97,65	0,09	-
Delicios de Voinești	0,31	0,57	0,75	0,54	14,79	3,13	***
Experimental average	3,35	3,80	3,87	3,67	100	0,00	-

DL5% = 0,501; DL1% = 0,712; DL0,1% = 1,031

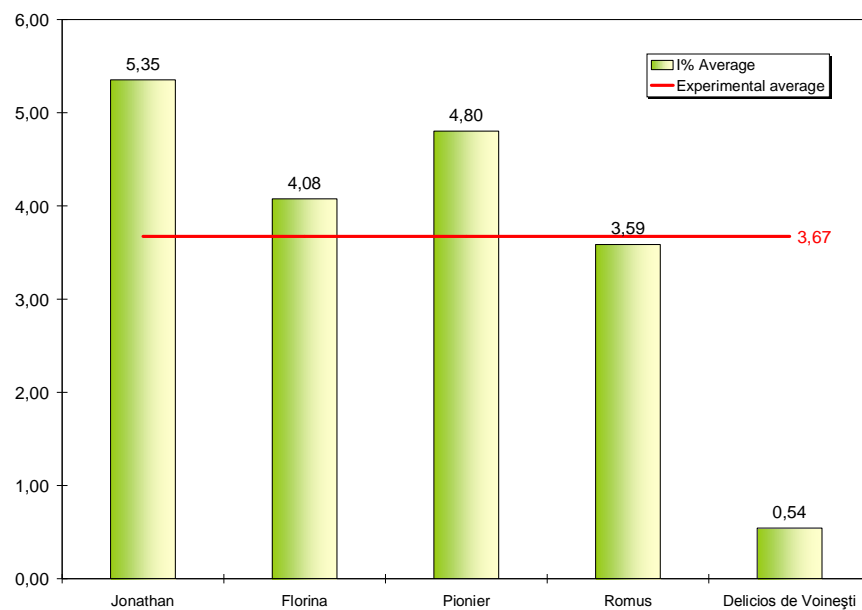


Figure 2. Attack intensity (I %) by *Podosphaera leucotricha* (Ell. et Ev) Slam f.c. *Oidium farinosum* Cke. in the climate conditions of the year 2003 compared to the experimental average

The difference to the control of 3,13 recommend the cultivar Delicios de Voinești as very resistant to powdery mildew the cultivars Jonathan and Pionier, with -1,68 and -1,13 respectively, which gives them very negative significance, i.e. these cultivars are very sensitive to powdery mildew.

### CONCLUSIONS AND RECOMMENDATIONS

- As expected, the Jonathan cultivar proved to be the most sensitive;
- Because of the danger of the disease to become chronic in the Jonathan cultivar, and

taking into account the rich source of inoculum, we recommend application by the book of all spraying against powdery mildew;

- Though the cultivar Delicios de Voinești responded well to powdery mildew, we should not forget that it is very sensitive to apple scab, i.e. treatments are necessary.

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