THE BEHAVIOR OF SOME VARIETES OF PEAR AT THE MELLIFEROUS FLEA *(PSYLLA PIRI)* ATTACK.

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Abstract: *The work license follows the behavior in culture of some varietes of pear, the research being carried out at Farm 3 Lugoj – The Didactic Experimental Base of Timişoara. In the research was analized the behavior at the attack from the melliferus flea (Psylla piri L.) as an often pest in every year producing attacks on the sprouts in special and on the leaf. The experience includes a number of nine variants with seven trees on a variant, from wich 3 trees were analized. The observations regarding the behavior of varietes of pear at the attack from the flea honez were carried out in the years 2011 – 2012 at the maximum pest attack. The effect caused by the pest on vegetative growth determined by measurements was also followed. The obtained results are presented in tabels regarding the frequency of the attack, the level of the attack from the pest (Psylla piri L.) and also the vigor of the trees after the trunk sectional area in* $cm^{2,}$ *the average length of growing sprouts for a number of nine varietes from each variant. Following observations were noted :poor attacked by flea honey of the pear were the varietes: Dean of winter, Ina Estival, Euras; middle attacked: Virgiliu Hibernal, Milenium; strong attacked: Williams, Countess of Paris, Napoca, Cure. The best vigor of growing after the trunk area and the average length of sprouts growing was obtained at the winter Dean of winter and the Ina Estival variety. Very significant results in terms of average length of growing sprouts were obtained at the Milenium and Napoca variety.*

Key words: *melliferus flea, pear, varietes, treatments*

INTRODUCTION

The research, as well as the production results obtained on the pear, have provided valuable recommendations of applicative character in the fruit tree practice, contributing to the successful success of this culture in many fruit trees in the country. The fact that the pear does not have a significant share in the western part of the country or in the Banat area has led us to undertake this research to prove that this culture deserves to be taken into account to a much greater extent , finding optimal development conditions here.

In the pear culture, especially research was carried out on the control of the melliferous flea in the Lugoj Fruit Center, where a pear plantation was established, comprising 9 varieties that were kept in observation about their behavior and their main diseases of the pear.

The planting being young in the early years was mainly followed by the behavior of these varieties and hybrids to the main diseases, but the results of the observations were different from year to year depending on the age of the plantation and the climatic conditions of each year in which they were carried out research.

For these reasons, since 2011, research has been carried out into the attack on melliferous flea (*Psylla pyri L.*) as this pest has frequently been encountered every year, producing especially shoots and leaves in this pear collection, to highlight the most resistant varieties for their expansion into the new fruit plantations(orchards.).

MATERIAL AND METHODS

The research objective pursued in this paper was the behavior of cultivars in the attack of the melliferous flea (*Psylla pyri*).

Observations on the behavior of pear varieties in the attack on the (*Psylla pyri*) or carried out in the years 2015-2016, August 8-10, 2012, when the maximum attack was recorded.

The observations made were followed by the effect of the damage caused by the pest on the vegetative growth by means of measurements:

- the vigor of the trees according to the surface of the trunk section;
- the average length of shoots growth;
- melliferous flea attack (*Psylla pyri*)

The experience was placed in a linear setting on 9 variants, each variant having a number of 7 trees, of which 3 trees were observed (each tree constituting a repetition).

Experimental variants are the following varieties of pear:

Williams
Winter decana
Ina - Estival
Virgiliu hibernal
Milenium
Countess of Paris
Napoca
Euras
Cüré

At each tree of the variation we observed the attack on 150 shoots and 300 leaves of 3 trees of each variant taken in observation placed differently in the crown of the tree causing the attack of the melliferous fea.

The attack frequency was determined, and the data obtained was interpreted using the scaling scale:

Notation:
F < 10% – poorly attacked (PA)
F = 10 – 30% – middle attack (MA)
F > 30% – strongly attack (SA)

RESULTS AND DISCUSSION

The area of the trunk section (Table 4.1) at 40 cm above the ground, determined in autumn this year, respectively in the sixth year after planting, it's between 18.33 cm2 in Euras and 37.66 cm2 at INA - Estival, higher wintering and winter INA Estival varieties had higher growth vigor, with differences in addition to the control (Cure variety) of 10,16 cm2 and 6,81 cm2.

Table 1.

Tree vigor of the trunk section in cm2

Variant number	Variety	X ± s X	S%	The difference to Mt		Meaning Difference
				+	-	
1.	Williams	21,44	128,26	-	-6,06	000
2.	Winter decana	34,31	80,15	6,81	-	xxx
3.	INA – Estival	37,66	73,02	10,16	-	xxx
4.	Virgiliu hibernal	20,91	131,51	-	-6,59	000
5.	Milenium	26,8	102,61	-	-0,7	-
6.	Countess of Paris	19,76	139,17	-	-7,74	000
7.	Napoca	23,57	116,67	-	-3,93	000
8.	Euras	21,70	126,72	-	-5,8	000
9.	Cüré (Mt.)	27,50	100	-	-	-

DL 5% = 1,90
DL 1% = 2,56
DL 0,01% = 3,41

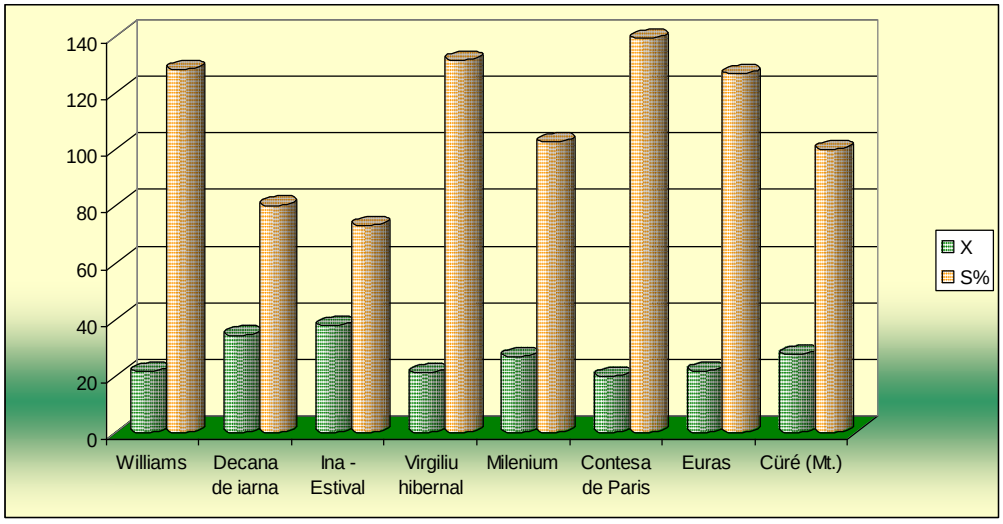

Figure 1. Tree vigor by trunk section area in cm2

The average growth rate of the shoots (Table 2) was the annual increases, they were 33.0 cm at Euras and 79.0 cm at INA - Estival, the highest annual increases were recorded at INA - Estival and Milenium with annual growth differences of 37 cm and 16.5 cm respectively.

Table 2.

The average length of shoots growth

Variant number	Variety	Average growth of shoots (cm)	Difference	Signifiance
1.	Williams	44,0	2	-
2.	Winter decana	53,0	11	xxx
3.	INA – Estival	79,0	37	xxx
4.	Virgiliu hibernal	44,5	2,5	-
5.	Milenium	58,5	16,5	xxx
6.	Countess of Paris	55,5	13,5	xxx
7.	Napoca	63,0	21	xxx
8.	Euras	33,0	-9	000
9.	Cüré (Mt.)	42,0	-	-

DL 5% = 3,81
DL 1% = 5,13
DL 0,01% = 6,82

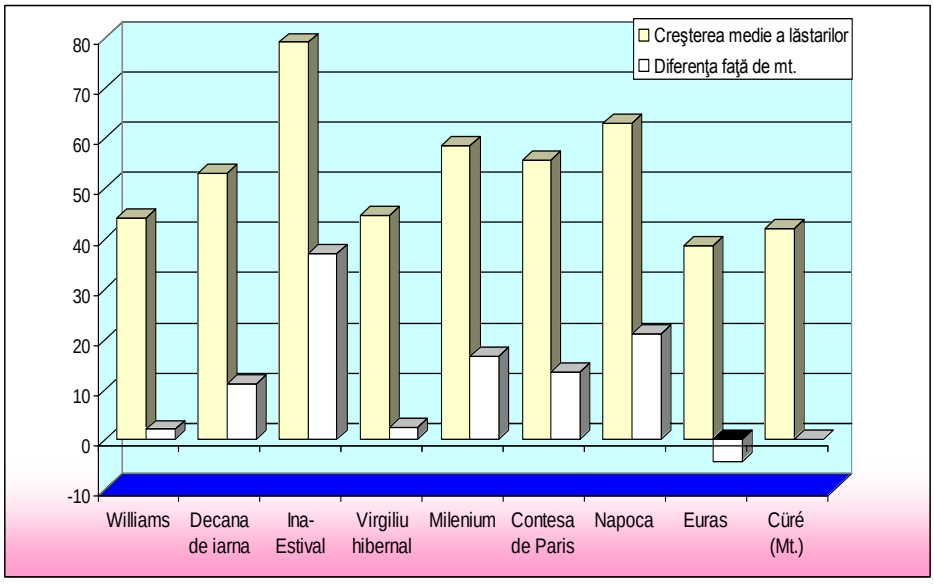

Figure 2. Average growth of shoots

RESULTS OBTAINED IN CONFIRMATION AT THE ATTACK OF MELIFER FLEA (*PSYLLA PYRI L.*)

The behavior of the varieties in relation to the attack of the melifer flea (*Psylla pyri*) is shown in Table 3.

Table 3

The results of the observations on the behavior of some hair varieties in the *Psylla pyri* attack

Variant number	Variety	Nr. of shoots seen	Nr. of attacked shoots	Attack frequency%	Attack level
1.	Williams	150	53	35,3	PA
2.	Winter decana	150	2	1,3	SA
3.	INA – Estival	150	3	2,0	SA
4.	Virgiliu hibernal	150	45	30,0	MA
5.	Milenium	150	39	26,0	MA
6.	Countess of Paris	150	79	52,6	PA
7.	Napoca	150	55	36,6	PA
8.	Euras	150	12	8,0	SA
9	Cüré (Mt.)	150	62	41,3	PA

Notation:
F < 10% – poorly attacked (PA)\
F = 10 – 30% – middle attack (MA)
F > 30% – strongly attack (SA)

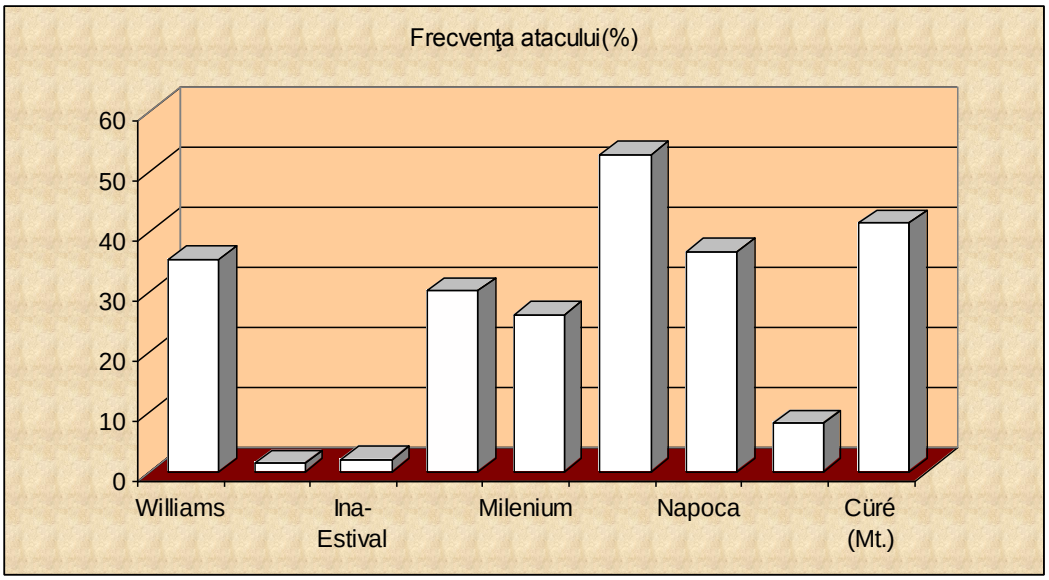

Figure 3. The results obtained regarding the behavior of some hair varieties in the *Psylla pyri* attack

The data presented in the table show that varieties: INA - Estival and Euras were poorly attacked by *Psylla pyri*, the number of shoots attacked by this pest being 1.3 - 8.0%. Medium attackers with 13.3-30% attack frequencies were: Virgilius hibernal and Milenium, the other elites including the Cüré variety, were strongly attacked, with an attack frequency of over 30%.

RESULTS OF PRODUCTION

The fruit production recorded in the experimental field is shown in Table 4

Table 4.

Fruit production of some varieties of pear

Variant number	Variety	Production per kg	Production at ha kg / ha	The difference		Signifiance
				+	-	
1.	Williams	0	0	0	0	-
2.	Winter decana	0,92	596	-	2426	00
3.	INA – Estival	2,15	1529	-	1493	-
4.	Virgiliu hibernal	1,64	1082	-	1940	0
5.	Milenium	3,21	2112	-	910	-
6.	Countess of Paris	0	0	-	-	-
7.	Napoca	2,68	2190	-	832	-
8.	Euras	0,75	500	-	2522	00
9.	Cüré (Mt.)	4,58	3022	-	-	-
		DL	5% =	3329,20		
		DL	1% =	2503,70		
		DL	0,01% =	1859,63		

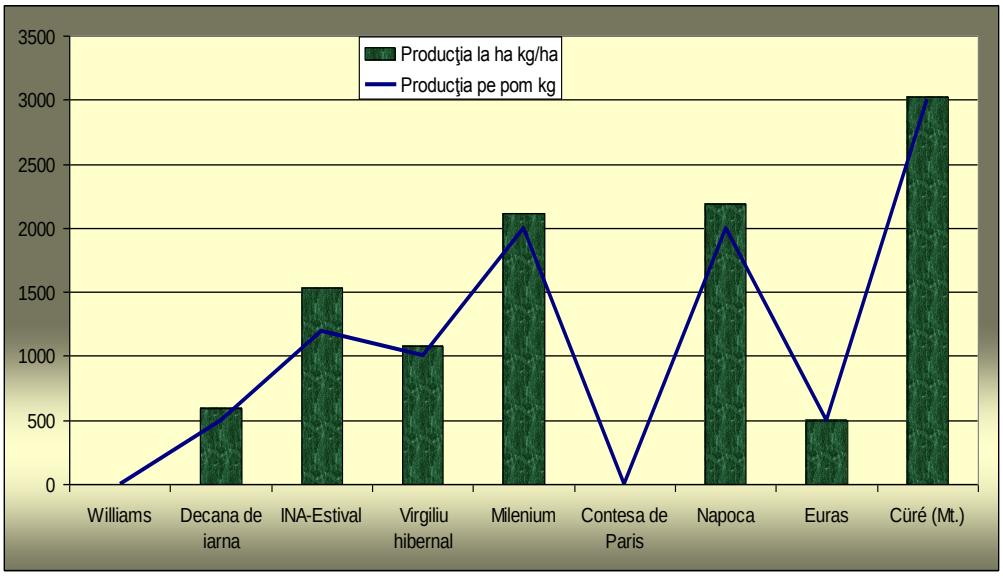

Figure 4. Fruit production of some pear varieties

From the data presented in this table, it results that the best results were obtained with a crop of 3022 kg / ha in the Cüré variety.

CONCLUSIONS

The winter Decana varieties and INA - Estival had the best growth potential after the trunk surface and the average growing length of the shoots.

The Milenium and Napoca varieties have had very significant results in terms of average shoots growth, or annual increases.

Poorly attacked by the pears melifer flea (*Psylla pyri*) were the Decana varieties of winter and INA - Estival.

Medium attacked by melifer fleas (Psylla piri) were Virgilius hibernal, Milenium and Euras varieties.

The best production results were obtained with the varieties: INA - Estival, Winter Decana, Napoca, Milenium and Euras.

The best vegetative growths and fruit yields had the weak and medium varieties attacked by the melifer flea (*Psylla pyri*).

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