RESEARCH ON THE NEW PARENT STOCKS' SELECTION FOR THE PEACH SPECIES

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Abstract*. This paper represents a synthesis of research results performed between 1998-2206 at the Research Fruit-growing Station Bihor,regarding the revealing and the selection of new parent stocks for the species peach,of 8 selections.*

This research started at a nursery and continued at an orchard stage.From the studying material there were chosen 8 selections of peach from the cultivated and unprompted flora.

After finishing the research,specialists came to the conclusion that the best results could be obtained at the parent stocks Zafara,Bonami,Elita de Balc.

At the orchard stage the best results from the grafted variants were obtained at the following parent stocks: Bonami, Farhad, Franc (composition), Elita de Balc.

Rezumat. *Aceasta lucrare prezinta o sinteza a rezultatelor experientelor realizate intre anii 1998-2006, la S.C.D.P. Bihor,privitor la cercetarea si selectia de noi portaltoi de piersic .*

Cercetarile au inceput in faza de pepiniera si au continuat in faza de livada.Pentru materialul supus cercetarii au fost alese 8 selectii de piersic din flora cultivata si spontana.

Dupa terminarea cercetarilor ,specialistii au putut observa ca cele mai bune rezultate au fost obtinute la portaltoii Zafara,Bonami,Elita de Balc.

In faza de livada,cele mai bune rezultate la variantele altoite s-au obtinut la portaltoii Bonami,Farhad,Franc(amestec),Elita de Balc.

Peach is one of the most valuable fruit-tree species, because of their very well appreciated fruits. This species find favorable growing and developing conditions in the North-Western part of the country. From the factors that lead to an important quantitative and qualitative production, from one year to another, a big role plays the parent stock. There were conducted many studies concerning parent stocks' establishment on habitat. This studies were carried out by many researchers (Casavela, 1965, Măiescu 1969, Ionescu and partners in 1974).

The climate conditions, but especially the soil's one with a high clay content established studies of identification and selection of new parent stocks, which show adaptability to these soils and which have upper characteristics.

The studies started with the nursery stage at S.C.D.P. Bihor (1995-1998) and continued with the orchard stage (1998-2006). The climate conditions in the nursery stage were represented by annual average temperature of 9,1°C – 10,1°C and the amount of precipitations of 501-707 mm; on the orchard stage the annual

average temperature was 10,1°C and the precipitations' amount was near 577,2 mm. The soil where studies were carried out was brown podsoled, with a pH of 5,51-6 and a humus content of 1,07-1,85%.

MATERIAL AND METHOD

The material was represented by eight peach selections (table 1) from the spontaneous and cultivated flora.

Table 1

The coming up percentage and the entire and STAS seedling plant production at the peach parent stock selections

Number	Type	Seedling plant 's coming up percentage (m^2)	Entire seedling plant's production thousand/ha	STAS seedling plant production thousand/ha	Root's length (cm)
1.	Franc(composition)	46	451	395	196
2.	Farhad	60	600	317	190
3.	H.Hole (Mt)	54	533	475	176
4.	Nikitski	53	523	498	210
5.	Zafara	69***	686	540	183
6.	Elberta	54	536	465	178
7.	Bonami	66***	657	585	192
8.	Elita de Balc	67	670	635	202
	Medium	**59**	**582**	**489**	**191**
	DL 5%		6,62		
	DL 1%		8,34		
	DL 0,1%		11,81		

The planting distance was 40 cm at the seedling plant's nursery and the researching method was that of geometrical blocks, with four repetitions. The surface of a repetition land was 12 m^2. At the fruit-trees nursery, it was used the subdivided lands' method with three repetitions, assuring 25 ingathering plants. The planting distance was 90/25 cm.

In the orchard there was used the randomized blocks' method with three repetitions and the planting distance was 4/3 m. There were grafted three peach species: Springold, Cardinal and Redhaven.

The observations and analyses made were those concerning the scoming up percentage, seedling plant's STAS production, the grafted fruit-trees production at a planting density of 45.000 seedling plants/ha, trunk's thickness growing, the copse medium growth, the wreath's volume and fruits' production. The applied technology on the studied selections was the same applied in usual conditions of production.

RESULTS AND DISCUSSIONS

The coming up percentage and the seedling plant's entire STAS production is given in table nr.1. As given, a high coming up percentage between 66-69% comparing to Mt (54%) had Bonami, Elita de Balc and Zafara. A low coming up percentage had Franc (composition) 44%. The STAS production had high values at the species Bonami and Elita de Balc (585-635 thousands/ha) comparing to Mt of 475 thousand/ha, being significant higher. Low seedling plants productions were obtained at Farhad selection – 317 thousand/ha comparing to 475 thousand/ha in case of Mt, being significant lower.

The grafted trees STAS production (in thousand/ha, table nr.2) had high results in case of: Zafara, Bonami, Elita de Blac, situated between 23.000-24.555 pieces/ha, significant higher and low productions in case of Nikitski with 7,967 pieces/ha, significant lower comparing to Mt (12.000 pieces/ha).

Table 2

The grafted trees' STAS production at a planting density of 45.000 pieces/ha

Number	Rootstock	Variety			
		Springold	Cardinal	Redhaven	Parent stock medium
1.	Franc	6.750	8.100	16.200	13.000
2.	Farhad	13.500	17.550	16.500	15.750
3.	H.Hole (Mt)	9.449	17.850	10.800	12.600
4.	Nikitski	6.350	10.800	6.750	7.967
5.	Zafara	22.500	23.550	22.950	23.000***
6.	Elberta	12.150	10.800	14.850	12.600
7.	Bonami	22.800	24.500	22.983	23.428***
8.	Elita de Balc	24.200	24.883	24.583	24.555***
	Medium	**14.172**	**17.254**	**16.952**	**16.613**
	DL 5%				4.475
	DL 1%				5.960
	DL 0,1%				7.714

The trunk's thickness growth (table nr.3) given by the trunk's section's surface, had high values in case of selections: Bonami, Nikitski, Ferhad, Franc (composition) and Elita de Balc, situated between 44,8-67 cm^2 comparing to 39,5 cm^2 at Mt, being significant higher in case of Bonami, significant distinctive in case of Nikitski and very significant in case of the other selections given above.

All the other selections had a lower thickness growth comparing to Mt, the differences being insignificant.

Table 3

- year four –

Number	Parent stock	Trumb's section's surface	%	Difference Mt surface	Meaning
1.	Elita de Balc	67	169	27,5	***
2.	Franc(composition)	58,1	147	18,6	***
3.	Farhad	52	131	12,5	***
4.	Bonami	44,8	113	5,3	*
5.	Nikitski	50,6	128	11,1	***
6.	Elberta	40,2	101	0,7	
7.	H. Hole (Mt)	39,5	100	-	
8.	Zafara	37	93	-2,5	-
	Medium	**48,6**	**-**	**-**	
	DL 5%			5,16	
	DL 1%			6,86	
	DL 0,1%			8,92	

Concerning copse' medium growth, trees' height, wreath's diameter and volume (table nr.4) there are not differences at the studied selections comparing to Mt. The copse medium growth was situated between 46-52,6 cm comparing to 51 cm at Mt, trees' height was 2,65-2,98 m comparing to 2,57 m at Mt and wreath's diameter was 2,35-2,80 m comparing to 2,48 m at Mt, wreath's volume had high in case of Nikitski, Franc (composition) and Bonami, being situated between 9,579-9,005 m^3/ha at Mt.

Table 4

Copse's medium growth, trees height, wreath's diameter and wreath's diameter and wreath's volume

Number	Parent stock	Copse's medium growth (cm)	Trees' height (m)	Wreath's diameter (m)	Wreath's volume (m^3/tree)
1.	Franc(composition)	52,6	2,98	2,80	9,442
2.	Nikitski	46,0	2,71	2,35	7,562
3.	Farhad	46,0	2,65	2,55	7,830
4.	H.Hole (Mt)	51,0	2,57	2,48	7,450
5.	Zafara	52,0	2,70	2,60	8,096
6.	Elberta	51,0	2,95	2,48	8,551
7.	Bonami	49,0	2,83	2,82	9,005
8.	Elita de Balc	50,0	2,80	2,68	8,583

Fruit production at the grafted species (table nr.5) had high values in case of selections: Bonami, Elita de Balc, Franc (composition), situated between 13,7-10,8 t/ha comparing to Mt with 7,7 t/ha, being significant higher in case of Franc (composition) and very significant higher in case of Bonami and Elita de Balc. The other selection had lower values comparing to Mt, but differences are insignificant.

Table 5

Results' synthesis concerning fruits production

Number	Parent stock	Entire production	Medium production	% to Mt	Difference to Mt	Meaning
1.	Franc(composition)	41,2	13,7	180	6,0	***
2.	Nikitski	39,7	13,2	171	5,5	***
3.	Farhad	32,4	10,8	140	3,1	*
4.	H.Hole (Mt)	27,8	9,3	121	1,6	
5.	Zafara	23,2	7,7	-	-	
6.	Elberta	19,5	6,5	84	-1,2	
7.	Bonami	19,5	6,5	84	-1,2	
8.	Elita de Balc	18,9	6,3	83	-1,4	
	Medium	**27,7**	**9,2**	**107,9**	**1,5**	
	DL 5%					2,77
	DL 1%					3,68
	DL 0,1%					4,79

CONCLUSIONS

1. The higher coming up percentage was obtained at: Bonami, Elita de Balc and Zafara (66-69%).

2. High STAS seedling plant's productions at the surface unit were obtained at Bonami and Elita de Balc with 585-635 thousand pieces/ha.

3. The grafted trees' production had good results at the selections Zafara,Bonami,Elita de Balc (23.000-24.555 pieces/ha)

4. The trunk's thickness growth had good results at the selections Bonami,Nikitski,Franc(composition) and Elita de Balc with 44.8-67.0 cm*cm.

5. The copse' medium growth, the trees' height and the wreath's diameter had no significant differences comparing to Mt.

6. The wreath's volume had high values at the selections Franc(composition) and Bonami (9.442-9.005 m/ tree)

7. The high fruit production, from the grafted trees ,had the selections Bonami, Elita de Balc, Franc(composition) with 13.7-10.8 t/ha.

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