RESEARCHES REGARDING OBTAINING PLANTING MATERIAL BY IDENTIFYING AND TESTING SOME PLUM SELECTIONS AS PARENT STOCKS THAT INDUCE SMALL WAISTED APRICOT TREES IN THE NURSERY

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Abstract

Parent stocks is a very significant factor in the process of producing planting material. (Ghena, 2004). An intensive crop and an efficient one represent a main object in the fruit growing process. (Chira, 2006). Parent stock represents a significant factor in the process of producing planting material in choosing the parentstock, they are taken into consideration: the planting system, the affinity level between the chosen varieties and some parent stocks. The main reasons of this research were represented by the plum exemplaries identification that could be used as seeds in order to obtain small wasted stocks. The studies that were carried out related to the growth and fructification but also to the obtained seeds' quality. Another objective was the seeding material behavior in the nursery and also the significant variants' behavior in the first and second field.

Key words:relation variety-parentstock, biological base , planting material, biotypes, slected plants

INTRODUCTION

The apricot yields are influenced in the modernization process by the planting density and the relation variety-stock.

The modernization and greening of the plum crop system by finding new stocks represent the necessity of this kind of approaches.

The main reason is to capitalize natural potential by identifying local plum populations used as stocks for the North-Western part of the country.

MATERIALS AND METHODS

In the nursery, plum trees build a good structure with the apricot trees, the varieties with yellow pulp are more suitable as parent stocks for the apricot. (Chira ,2005). In the nursery, the plum parent stocks are more significant than the wax cherry, used as parent stocks for the apricot. (Venig,2006)

The researches were carried out in the period 2005-2009 within the fruit-growing resort, the used material and technical resort was that existing at the farm. In order to identify the small wasted trees, there was used the biological resort, which includes 10 hectares plum seeds, a plantation established in the spring of 1998. The main reason of this plantation was to obtain the necessary seeds for obtaining generative root-stocks for apricot. At the beginning, an aspect taken into consideration was to wide the plum parent stocks' range. For the plantation, there were used seeLSDings obtained from plum seeds "Albute" obtained from Marghita area. The planting distance was $4 \times 4 m$, with seeLSDings representing hybrid down wards of two Prunus instituia varieties, Iuliana and Pomariorum,

existing in Bihor county. Taking into consideration the hybrid genetic origin of the plum seeds, there was tried to identify those trees with small waist, productive and drought resistant. There were chosen 12 trees (variants) for the research, using as testifier for the comparison the wax cherry (M2) and the parent stock Albe mici (M1). As working method there were used the descriptive and the biological method, there were made measurements, determinations for the entire research period.

RESULTS AND DISCUSSIONS

From the growing and fructification process analyse, there were registered some differences related to the waist and to some morphological and biological characteristics of the seed plants but also related to the main characteristics of the fruits used in the nursery (Tab.1). After an overall analyse of all parameters taken into consideration for the plum seeds but also of the seeds and seeLSDings behavior (Tab.2,Tab.3), results that the significant produces which meet the object and the research and production reason have only the following selections: 20/17, 20/22, 50/46 and 25/25.

Tabel 1

The waist, production and efficiency for obtaining one seeds by for the	
identifies plum seeds (2005 production)	
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Seed	The trunk	Kg production/	Obtained	Fruit quantity	Report pulp/
	section surface	tree	seeds quantity	for one kg seeds	seed
20/17	63,6	68	3,800	17,9	94,4/5,6
20/22	105,5	37	1,900	19,7	94,9/5,1
21/21	102,0	35	2,000	17,5	94,3/5,7
21/25	88,0	63	1,760	35,1	97,2/2,8
22/18	94,8	46	1,500	30,0	96,7/3,3
24/5	109,2	47	2,220	21,1	95,3/4,7
24/31	78,5	29	1,370	21,0	95,3/4,7
25/19	72,2	31	0,700	43,4	97,7/2,3
25/25	52,7	23	1,250	18,2	94,6/5,4
49/37	55,3	23	0,650	36,1	97,2/2,8
50/20	72,2	12	0,325	36,9	97,3/2,7
50/46	78,5	53	2,200	24,1	95,8/4,2
Medium (Mt)	81,0	38,9	1,640	26,75	95,9/4,1
M ₁ – Albe mici		80	4,320	18,5	92,0/8,0
M ₂ – wax cherry		58	3,152	18,0	94,5/5,5

Table 2

Results related to the arised seeLSDings percentage

Seed	Arising	Relative	Differences	t	LSD	Р	Significance
(variant)	percentage	percentage	<u>+</u>		5%	5%	
	%	%	(d)				
20/17	63	166,2	+25,1	4,13	12,34	32,5	XXX
20/22	70,25	185,3	+32,35	5,32	12,34	32,5	XXX
21/21	35,25	93,0	-2,65				-
21/25	20,2	53,3	-17,7				00
22/18	25	66,0	-12,9				0
24/5	28,75	75,8	-9,15				-
24/31	22,75	60,0	-15,15				00
25/19	30,75	81,1	-7,15				-
25/25	41,75	110,1	+3,85	0,63	12,34	32,5	-
49/37	39	102,9	+1,1	0,18	12,34	32,5	-
50/20	35	92,3	-2,9				-
50/46	43	113,4	-5,1	0,83	12,34	32,5	-
Medium	37,9	100	Mt				

LSD 5% = 12,34; LSD 1% = 16,53; LSD 0,1% = 21,82

Table 3

	Production and quality of the seeLSDings							
Seed	Seed	Arised	Harvested	STAS	On 1m ²	On 1ha	STAS	%
	pieces	pieces	pieces	pieces	pieces	thousand	thousand	
						pieces	pieces	
20/17	8824	5519	4584	2063	70	700	315	45
20/22	4476	2674	2350	940	72	720	288	40
21/21	3714	1211	806	484	25	250	150	60
21/25	5781	877	502	241	20	200	96	48
22/18	3508	664	460	230	18	180	90	50
24/5	2884	672	429	215	15	150	75	50
24/31	2629	544	408	216	20	200	106	53
25/19	1495	324	182	106	32	320	186	58
25/25	3531	1346	955	573	67	670	402	60
49/37	1520	683	477	291	33	330	201	61
50/20	515	188	185	102	38	380	209	55
50/46	4620	2138	974	555	47	470	268	57
Medium	3625	1403	1026	501	38	381	199	53,1
$M_1 - Albe$	400	127	100	87	40	400	348	87
mici								
$M_2 - wax$	400	230	190	138	70	700	420	60
cherry								

The behavior in the first and second field of the selected seeLSDings as parent stocks for plum, of the four biotypes, selected after the results obtained seeLSDings school was researched by organizing a trifactorial experience $(4 \times 2 \times 3)$, where the graduation of factor A (the parent stocks) appears just once, of factor B (the species) twice and of factor C (the soil) six times. In the first field were grafted 3 plum varieties (Comandor,Sirena,Favorit). It was researched the grip percentage, the percentage for gripped eyes and remained in vegetation (Tab 4).

	The gripped eyes percentage							
				Parent stoc	k		Testifier	
Species	Variety	20/17	20/22	25/25	50/46	Medium (Mt)	M_1	M_2
Gripping pro	of (in autumn, af	ter 25 days)	%					
Apricot	Comandor	47	53	55	44	49,75	42	32
	Sirena	44	29	47	45	41,25	49	45
	Favorit	33	30	42	48	38,25	27	27
Me	dium	41,33	37,33	48,00	45,67	43,08	39,33	34.66
Gripping eyes (in spring 2008) %								
Apricot	Comandor	27	34	38	29	32,00	31	20
	Sirena	25	17	31	23	24,00	22	21
	Favorit	20	22	31	27	25,00	15	16
Me	dium	24,00	24,33	33,33	26,33	27,00	22,66	19,00

For the apricot varieties, it was resembled that for the parentstock, the highest gripping percentage were registered for the selections 50/46 and 25/25, for all species (44-48%, 42-52%). The Comandor variety registered the best behavior on all four parentstocks sections.

Table 5

Species	Parent			Branches	length - cm		
	stock	1 V	1 VI	1 VII	1 VIII	1 IX	1 X
Apricot	20/17	18.3	40.9	63.6	83.9	117.0	138.3
	20/22	20.2	42.9	71.6	100.4	137.2	159.0
	25/25	19.7	43.0	67.1	91.5	126.9	147.0
	50/46	17.4	38.8	65.7	86.3	118.4	133.0
	Medium	18.9	41.4	67.0	90.5	124.8	143.6
	Wax	13.2	26.8	51.0	73.7	103.5	153.7
	cherry						

The growing dynamics of the grafted branches in the second field

The length growing dynamic resemble the fact that the parentstocks 50/46 and 20/17 registered the lowest growth. All apricot varieties registerd a low growth on all 4 parentstocks selections comparing to Albe mici plums and wax cherry.

Table 6

Depent staals	Variaty	Medium production for	STAS	
Parent stock	variety	ha	%	
20/17	Comandor	25.9	78.4	
	Sirena	24.2	80.5	
	Favorit	18.1	86.7	
Х		22.7	81.5	
20/22	Comandor	29.2	80.5	
	Sirena	16.0	88.1	
	Favorit	16.5	86.7	
Х		20.5	84.4	
25/25	Comandor	30.3	86.8	
	Sirena	25.8	87.2	
	Favorit	23.1	90.0	
Х		26.4	87.9	
50/56	Comandor	24.2	86.0	
	Sirena	24.8	80.6	
	Favorit	26.4	72.3	
Х		25.1	81.3	
Medium mt	Comandor	27.4	83.2	
	Sirena	22.7	82.8	
	Favorit	21.0	84.7	
Х		23.7	83.5	
M ₁ – Albe mici	Comandor	23.1	93.9	
	Sirena	27.0	69.6	
	Favorit	14.9	87.2	
Х		21.6	82.4	
M ₂ – wax cherry	Comandor	17.6	92.0	
ž	Sirena	24.7	78.9	
	Favorit	14.8	95.9	
х		19.1	86.9	

Production trees evolution in the second field

Analysing the grafted trees number, there was resembled the fact that in case of apricot, selections 25/25 and 50/46, for Comandor and Favorit varieties, registered the highest production. The production quality (STAS trees) was higher in case of the selections 25/25 and 20/22. A good quality material was met for the Comandor variety.

CONCLUSIONS

The selection 20/17 meet the desired nursery parameters and register the best results in order to obtain a small waisted planting material.

As a parent stock, the plum franc builds uniform midLSDe and low waisted trees for apricot.(Cepoiu,1982)

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