

RESEARCHES REGARDING THE PRODUCTION AND THE ECONOMICAL EFFICIENCY CONCRETION FOR THE PEACH TREES

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Abstract

The paper presents the grafted peach trees productions, in experimental fields, using as variants different planting distances in the first field, between the rows and on rows.

The measurements and observations that were carried out, resemble the fact that the best planting distance for the trees is 15/90, 15/80 and 20/80 cm.

Key words: mirobolan, planting density, grafting, parcel thickness.

INTRODUCTION

The planting material's quality is a significant aspect for a favorable peach trees plantation. Peach is one of the most appreciated fruit species because of its fruit specially qualities but also for its biological peculiarity (Drăgănescu E., 2002).

In order obtain a high quality of the planting material it is necessary a suitable technology.

MATERIAL AND METHOD

The material used as parent stock is mirobolan.

For choosing the parent stock there must be taken into consideration the following: the used culture system, the climate conditions, the affinity with the cultivated species. For the peach trees, it is recommended to be used the mirobolan, for both areas (those with a high moisture content and those that are dry) (Mihuț E., Drăgănescu E., 2003).

Mirobolan was for a long time used as parent stock in the Romanian nurseries, but because of its many different types, the obtained results are always contradictory (Chira Lenuța, 2005).

Until 2004, in Romania there have been homologated eight generative parent stocks, that are used for creating seed trees plantations (with grafted trees) (Ghena N., Braniște M., Stănică F., 2004).

The peach trees parent stocks called Hygama and Rubira register very good results for obtaining grafted peach trees (Klock P., 2008).

Many experiences lead to the fact that parent stock genetical heritage influence over the fruit trees is higher than that of the graft (Chira A & co., 2006).

The studied aspect was the parent stocks optimum planting distance in the first field.

The planting distances of the mirobolan parent stocks in the first field and the STAS trees production obtained /ha are the following: 90/20 cm; 55.000 seedlings pieces obtained in the first field /ha and 38.000 trees obtained in the second field (Drăgănescu E., 1988).

For the carried out research, there were used the following planting distances: 80 and 90 cm between the rows and 15 cm, 20 cm, 25 cm and 30 cm on the row. There were also used 50 seeLSDings /variant, like the subdivided lots of 2 x 4 with four repetitions.

The seeLSDings were planted in the first field in the autumn of 2009. The seeLSDings planting period in the first field is in autumn or early in the spring. In most of the nurseries from our country, the plantings are made in the spring (Cepoiu N. & co., 2008).

The pedoclimatic conditions were: a preluvosol soil eith the horizons Ao – Bt – C, the average temperatures were 9,7°C and the rainfalls amount was 580 and 830 mm.

The used grafting method was that of the vegetative rest eyes. This method requires that the grafting branches crop should be made on the grafting day or one-two days earlier, but kept in appropriate conditions (Popescu M & co., 1982).

The growing vigour is influenced by the hybrid combination, hybrid offspring but also by the fact that is on own roots or grafted (Venig Aurora, 2008).

RESULTS AND DISSCUSIONS

The parcel's thickness of the seedlings (table nr.1) registers very low significant values, comparing to the Mt, for the distances 90 x 15 cm, 90 x 20 cm and low significant values for the distances 80 x 15 cm, 80 x 20 cm, 80 x 25 cm and 80 x 30 cm. The values, statistically proven are situated between 12,3 and 13,8 mm comparing to 14,9 mm for the Mt.

Concerning the planting density influence over the parent stocks grip, table nr.2 resemble the fact that this is not influenced, the values being alike with those registered for Mt.

Table 1

The planting density influence over the parcel's thickness of the seedlings

Nb.	Planting distance cm	Parcel thickness mm	Meaning
1.	90 x 15	12,3	000
2.	90 x 20	13,1	000
3.	90 x 25 (Mt)	14,9	-
4.	90 x 30	15,1	-
5.	80 x 15	13,5	00
6.	80 x 20	13,5	00
7.	80 x 25	13,8	00
8.	80 x 30	13,6	00

LSD 5% 0,731

LSD 1% 1,013

LSD 0,1% 1,407

The grafts' height and thickness, at 80 cm from the ground (table nr.3) doesn't register significant differences for the used variants. Comparing to Mt, the grafted trees height has values situated between 120-132 cm comparing to 121 cm for the Mt.

The thickness was situated between 10-11,3 mm comparing to 11,7 mm for Mt.

The entire STAS grafted trees production (table 4) registers values for the densities 90 x 15 cm, 80 x 15 cm, 80 x 20 cm, 23.615-28.931 pieces/ha grafted trees, comparing to 16.466 pieces/ha for Mt and 22.141-28.011 pieces/ha comparing to 15.783 pieces/ha for the STAS grafted trees' production.

The production differences comparing to Mt are statistically proven.

Table 2

The planting density influence over the grafted trees' height and thickness

Nb.	Planting distance cm	Grip %	Height cm	Thickness mm
1.	90 x 15	95	126	11
2.	90 x 20	92	126	11
3.	90 x 25 (Mt)	95	121	11,7
4.	90 x 30	95	120	11
5.	80 x 15	95	128	10,7
6.	80 x 20	95	130	10
7.	80 x 25	98	128	11
8.	80 x 30	98	132	11,3
	Average		126,4	10,9

Table 3

The planting density influence over the grafted trees' entire and STAS production (pieces/ha)

Nb.	Planting distance cm	Entire production pieces	Meaning	STAS production (pieces)	Meaning
1.	90 x 15	28.431	xx	28.011	xxx
2.	90 x 20	22.366	-	20.309	-
3.	90 x 25	16.466	-	15.783	-
4.	90 x 30	15.656	-	13.906	-
5.	80 x 15	26.665	xx	25.241	xxx
6.	80 x 20	23.615	-	22.141	x
7.	80 x 25	19.516	-	18.891	-
8.	80 x 30	18.373	-	17.312	-
	LSD 5%		6.098		4.603
	LSD 1%		8.442		6.397
	LSD 0,1%		12.465		9.441

Regarding to the planting density influence over the economical efficiency (table 4), it can be seen the fact that the low planting distances 90 x 15 cm and 80 x 15 cm, there are obtained high benefits comparing to the low planting distances (90 x 30 cm and 80 x 30 cm). The benefits totalize between 22.289 lei/ha and 23.733 lei/ha for 80 x 15 cm and 90 x 15 cm comparing to 14.705 lei/ha and 18.139 lei/ha at 90 x 30 cm and 80 x 30 cm.

Table 4

Main elements of the economical efficiency

Nb.	Planting distance cm	STAS grafted trees production pieces/ha	Productions' value	Expenses lei/ha	Benefit lei/ha
1.	90 x 15	28.011	280.110	256.377	23.733
2.	90 x 30	13.906	139.060	124.355	14.705
3.	80 x 15	25.241	252.410	230.121	22.289
4.	80 x 30	17.312	173.120	154.981	18.139

CONCLUSIONS

The parcels' thickness of the parent stocks in the grafting moment registers low values for low planting distances, 80 x 15 cm, 80 x 20 cm, 90 x 15 cm, but the seedlings' thicknesses allow their entire grafting.

The grafting grip, after the autumn stock, like the grafting trees height and thickness are not influenced by the planting density.

The entire and STAS grafted trees production registered high values for the densities 90 x 15 cm, 80 x 15 cm and 80 x 20 cm, which are recommended to be used as planting densities.

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