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BEHAVIOUR OF PEACH-TREE IN NURSERY, GRAFTED ON DWARF ROOTSTOCK, OBTAINED AT RESEARCH-DEVELOPMENT IN FRUITS GROWING STATION OF ORADEA

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ABSTRACT: The paper shown a study compares the behavior of the peach-tree grafted on dwarf stock with that of the peach-tree grafted on standard rootstock. The results show clearly that, even in nursery, the peach-tree grafted one dwarf stock is shorter than the peach-tree grafted on standard rootstock. Evidence proves that values both height and thickness of grafts of all varieties grafted on dwarf rootstock are lower than the control value, witch was expectable and meant the in to be achieved. Research who conducted the authors, have taken place in the nursery tree, belonging to the Research Station of the University of Oradea.

KEYWORDS: peach-tree, dwarf rootstock

INTRODUCTION

One of the main objectives of medium and long-term research worldwide has been the reduction of tree height by creating stock and genetically dwarfs varieties. In terms of its importance the peach-tree holds second place worldwide, after the apple-tree.

The dwarf stock-subject of the present study has been obtained at Research- Development in Fruits Growing Station-Oradea.

MATERIAL AND METHOD

The material consists of three dwarf rootstock, namely Oradea2, Oradea3 and Oradea5. They were grafted on three varieties of peach: variety Fillette with early maturity variety red oven with middle maturity and variety "Superba de Toamnă" with late maturity. The numbers of sapling rootstock planted per area 5.5.000 pieces/ha at a planting distance of 90/20cm. The chosen experimental technique was that of subdivided lots in three rows with 75 plants harvestable per row. The experiments are poly-factorial.

Factor A, stock with the following:

a1 - Oradea2

a1 - Oradea3

a1 - Oradea5

Factor B Stock with the following Variants:

b1-Fillette

b1-Redhaven

b1-Superba de toamnă

EXPERIMENTAL CONDITIONS

The average annual temperature was 10.4-12°C, rainfall 585-620 mm. The soil reseed in the experiment was brown clay with A0-B1-C profile. Horizon Thickness was 25cm.

Observations and determinations performed: These are claimed by experimental technique, and concern the successful grafting of peach tree varieties under study, starting vegetation in spring of the grafts, growth in thickness of the grafted trees(cm) , growth in height of the grafted trees (cm), production of grafted trees per area (thousand pieces/ha).

The successful grafting of peach-tree on dwarf rootstock (table1) records values close to Mt (control value) of 90.4%- 95.3% versus 96.0% control value, except for the variety Redhaven grafted on Oradea3 woes values 100% except Mt and the varieties Fillette grafted on Oradea5 Rdehaven-Oradea5, Fillette-Oradea2 with values of 81.3%-85.3%, lower than the standard mt(control value/of 96%).

Starting vegetation of grafts in spring for all peach varieties grafted on dwarf rootstock is shown in Table 2. The values registered for all the rootstock under study are chose to Mt (control value) respectively 54.6-71% versus 65.3% (control value). The growth in height of the grafted trees is show in Table 3. It is obvious that all varieties of peach trees on dwarf stock under study show lower value than the control value respectively 134.8-150.3 cm versus 160 cm.

The growth in thickness of the peach-tree grafted on dwarf rootstock(table4) highlights the some aspect as in the case of the height of peach tree on dwarf rootstock namely, all values recorded are lower than Mt(control value) for all varieties an all rootstock, respectively 3-3,62 cm versus 3.83 cm me

Production of grafted fruit trees (table 5) record values close to Mt, respectively 27.500-33.600 pieces/ha versus 29,700 pieces/ha. Control value A slightly higher production rate is registered in the case of the varieties "Superba de Toamnă" - Oradea2 where the values range from 0.9 to 3.9 thousand

pieces/ha. The production of grafted fruit trees registers values of 92.6-113%, with higher values for the variants where the production of grafted fruit trees showed a plus versus the control value (mt).

Table 1. Successful Grafting of peach varieties on dwarf rootstock under study

	Variety/Rootstock	Grafted catch [%]	The difference between Mt.
1	Fillette / Oradea 2	85,3	-10,7
2	Redhaven / Oradea 2	95,3	-0,7
3	Superbă de toamnă / Oradea 2	90,4	-5,6
4	Fillette / Oradea 3	92	-4
5	Redhaven / Oradea 3	100	+4
6	Superbă de Toamnă / Oradea 3	92	-4
7	Fillette / Oradea 5	81,3	-14,7
8	Redhaven / Oradea 5	84,3	-11,7
9	Superbă de Toamnă / Oradea 5	93,7	-2,8
10	Redhaven / De Balc (Mt.)	96	-

Table 2. Growth in heights of variety grafted on dwarf rootstock

	Variety/Rootstocke	Growth in height [cm]	The difference between Mt.
1	Fillette / Oradea 2	145,3	-14,7
2	Redhaven / Oradea 2	146	-14
3	Superbă de toamnă / Oradea 2	147,3	-12,7
4	Fillette / Oradea 3	148,3	-11,7
5	Redhaven / Oradea 3	147,7	-12,3
6	Superbă de Toamnă / Oradea 3	150,3	-9,7
7	Fillette / Oradea 5	134,8	-25,2
8	Redhaven / Oradea 5	135,3	-24,7
9	Superbă de Toamnă / Oradea 5	148,3	-11,7
10	Redhaven / De Balc (Mt.)	160	-

Table 3. The successful graft in of peach-trees on dwarf rootstock

	Variety/Rootstock	Successful grafting [%]	The difference between Mt.
1	Fillette / Oradea 2	66,3	+1,0
2	Redhaven / Oradea 2	67,7	+2,4
3	Superbă de toamnă / Oradea 2	70,6	+5,3
4	Fillette / Oradea 3	65,6	+0,3
5	Redhaven / Oradea 3	63,3	-2,0
6	Superbă de Toamnă / Oradea 3	71	+5,7
7	Fillette / Oradea 5	54,6	-10,7
8	Redhaven / Oradea 5	61	-4,3
9	Superbă de Toamnă / Oradea 5	60	5,3
10	Redhaven / De Balc (Mt.)	65,3	-

Table 4. Growth in thickness of varieties grafted on dwarf rootstock

	Variety/Rootstock	Successful grafting [%]	The difference between Mt.
1	Fillette / Oradea 2	3,31	-0,52
2	Redhaven / Oradea 2+3	3,39	0,44
3	Superbă de toamnă / Oradea 2	3,62	0,21
4	Fillette / Oradea 3	3,39	0,44
5	Redhaven / Oradea 3	3,56	0,27
6	Superbă de Toamnă / Oradea 3	3,49	0,34
7	Fillette / Oradea 5	3,00	0,83
8	Redhaven / Oradea 5	3,45	0,38
9	Superbă de Toamnă / Oradea 5	3,56	0,27
10	Redhaven / De Balc (Mt.)	3,83	-

Table 5. Production Of grafted fruit trees for peach varieties grafete on dwarf rootstock

Nr. crt.	Variety/rootstock	Production rootstock thousands pieces/ha.	Production [%]	The difference between Mt.	Signification
1	Fillette / Oradea 2	28,2	95,5	-1,5	-
2	Redhaven / Oradea 2	31,1	104,7	+2,4	-
3	Superbă de toamnă / Oradea 2	27,5	92,6	-2,2	-
4	Fillette / Oradea 3	29,7	100	0	-
5	Redhaven / Oradea 3	31,5	106	-1,8	-
6	Superbă de Toamnă / Oradea 3	28,0	94,3	-1,7	-
7	Fillette / Oradea 5	33,6	113	+3,9	-
8	Redhaven / Oradea 5	30,6	103	+0,9	-
9	Superbă de Toamnă / Oradea 5	27,8	93,6	-1,9	-
10	Redhaven / De Balc (Mt.)	29,7	100	-	-

DL 5% = -13,8; DL 1% = - 14,1; DL 0,1% = - 14,4

CONCLUSIONS

The successful grafting of varieties under study on dwarf rootstock shows values similar to Mt (control value).

Starting vegetation of grafts in spring for all varieties grafted on dwarf stock shows values closer to Mt, with lower values for stock Oradea 5 of 54.6-61% versus 65.3% mt. The growth in height shows values for all varieties on dwarf rootstock. The growth in thickness is similar to that in height, showing lower values versus the control value.

The production of grafted trees shows values of 27.50-33.600 pieces/ha, close to the central value of 29.700 pieces/ha. Higher production rates have been registered for dwarf rootstock Oradea5, with 0.900-3.900 pieces/ha. These are, however, insignificant.

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