

STUDY ON THE BEHAVIOR OF NEW VARIETIES OF SWEET CHERRY IN CLIMATIC CONDITIONS OF NE ROMANIA

STUDIU PRIVIND COMPORTAREA SOIURILOR NOI DE CIREȘ ÎN CONDIȚIILE PEDOCLIMATICE DIN NE ROMÂNIEI

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Abstract. *Cherry, representative species for Iasi district, has experienced in last years a progressive improvement of assortment, enriching it with new varieties, valuable, well adapted for NE Romanian country. New varieties are characterized by large-fruited and precocity, high quality, which, by default, determines and increased productivity. The experience has been realized over the years 2008–2010, studying the behaviour of four cherry varieties, grafted on mahaleb and planted on the 5/4 m. System maintenance of the soil was worked field, and the crown shape was free, flattened by pruning on the direction of the row. Following the application of foliar fertilization there were achieved increased productions with 7.4 to 12.4 t/ha, depending on the variant of fertilization. Vigor of trees has been expressed by the trunk area surface, this indicator was 258,6 cm² at Bucium variety, 272.2 cm² at variety Iașirom, 129,9 cm² to variety Ștefan and 230,5 cm² at variety Teresa. The average production of fruit varieties analyzed oscilated between 20,8 and 33.0 kg/tree, with slight variations depending on the climatic conditions in the experimental years .*

Key words: intensive culture system, sweet cherry, new varieties, climatic conditions, North East of Romania

Rezumat. *Cireșul, specie reprezentativă pentru județul Iași, a cunoscut în ultimii ani o înnoire progresivă a sortimentului, acesta îmbogățindu-se cu soiuri noi, valoroase, bine adaptate în regiunea de NE a Moldovei. Noile soiuri se caracterizează prin precocitate, fructe mari și de calitate superioară, ceea ce, implicit, determină și o productivitate sporită. Pentru realizarea experienței s-a urmărit, pe parcursul anilor 2008 – 2010, comportarea a patru soiuri de cireș, altoite pe mahaleb și plantate la 5/4m. Sistemul de întreținere a solului a fost ogorul lucrat, iar forma de coroană a fost liberă, aplatizată prin tăieri pe direcția rândului. Vigoarea de creștere a pomilor a fost exprimată prin indicele suprafeței secțiunii transversale a trunchiului, acest indicator fiind de 258,6 cm² la soiul Bucium, 272,2 cm² la soiul Iașirom, 129,9 cm² la soiul Ștefan și 230,5 cm² la soiul Tereza. Producția medie de fructe a oscilat la soiurile analizate între 20,8 și 33,0 kg/pom, înregistrându-se mici variații în funcție de condițiile climatice din anii experimentali.*

Cuvinte cheie: sistem intensiv, cireș, soiuri noi, condiții pedoclimatice, Nord Estul României

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INTRODUCTION

Increasing demand for fruit on the market in combination with good prices obtained by farmers have as result a significant increase of surfaces cultivated with sweet cherry orchards in Iasi district. Whereas in international assortment have imposed new fruit varieties (Istrate M., Ludovic P, 2003; Petre L., 2003), whose weight exceeds 8 g/pcs, researchers have tried to come in farmers greeting, and as a result, in Iasi, through sustained efforts of specialists of the SCDP were obtained, in last years, an entire series of new varieties of sweet cherry varieties (Elena Iurea, Ludovic P., Sarbu Sorina, 2009).

MATERIAL AND METHOD

The experience was realized in a sweet cherry orchard founded in 1991 at the distance of planting by 5/4 m, where the maintenance of the soil was worked field, and the technological links were specific for sweet cherry culture.

Experimental variants were represented by Bucium (V1), Iasirom (V2), Stefan (Mt-V3), Teresa (V4), grafted on rootstock mahaleb and leded in a free crown shape flattened by pruning.

Observations were made on the fruit trees vigour, fruit production quantities, as well as physical and chemical characteristics.

RESULTS AND DISCUSSIONS

Probing table 1 it can be seen that in the experience, the most vigorous was the variety Bucium with 285,6 cm² surface section of the trunk. Also, Iasirom variety, with 272,2 cm² recorded a high vigor too. Stefan and Theresa varieties realized values for the surface of the trunk 230,5 and respectively 192,9 cm².

Production of fruit realized by Bucium variety was in around 32.0-33,5 kg fruit on the tree, that corresponding for a productions nearly 16 t/ha. In descending order, the varieties Iasirom and Tereza received productions ranging between 23 to 24.5 kg/tree, respectively an estimated productions between 11.5 - 13, 1t/ha.

Table 1

Varieties growth vigor (trunk section area cm²)

Variety	2008	2009	2010	Average 2008 - 2010	Difference to control
V1 - Bucium	259,2	286,9	310,6	285,6	+92,7
V2 - Iasirom	268,5	272,3	275,9	272,2	+82,3
V3 – Stefan (mt)	181,2	192,1	205,4	192,9	0
V4 - Tereza	200,5	229,8	261,1	230,5	-37,6

Productions ranging between 20.3-21,7 kg/tree were recorded at variety Stefan. That variety obtaining an estimated production by 10,1-10,8 tonnes/hectare (table 2).

Table 2

Fruit production (kg/tree)					
Variety	2008	2009	2010	Average 2008 - 2010	Difference to control
V1 - Bucium	32,8	33,5	32,7	33,0	+12,2
V2 - Iasirom	23,0	26,2	24,6	24,6	+3,8
V3 – Stefan (mt)	20,4	20,3	21,7	20,8	0
V4 - Tereza	23,5	25,3	24,7	24,5	+3,7

The average fruit weight (table 3) was 8.1 g in Bucium, 7.5 g variety in the variety Iasirom, 7.9 g at Teresa and variety in the variety Stefan 8,0 g.

Average diameter fruits studied was settled between 21-26 mm and dry substance ranged from 17.2 percent in Teresa and variety in the variety Stefan 20.4%.

Table 3

Main physical and chemical fruit characteristics					
Variety	Fruits medium weight (g)	Fruit diameter (mm)	Skin colour	S.U.	Total acidity H ₂ SO ₄ /100g
V1 - Bucium	8,1	26	Dark red	17,8	0,245
V2 - Iasirom	7,5	21	Red	17,6	0,294
V3 – Stefan (mt)	8,0	25	Dark red	20,4	0,238
V4 - Tereza	7,9	25	Dark red	17,2	0,343

CONCLUSIONS

1. Trees vigour, expressed through the trunk section area was between 285,6 and 192,9 cm². With all the varieties studied fit into the medium to large group, the vigor of new varieties has diminished considerably in comparison with of the old varieties (Germersdorf, Hedelfinger, Boambe de Cotnari).

2. Production of fruit had values between 33.5-20.3 kg/tree, superior in quantity and productions that can be compared with the varieties obtained by foreign productions equivalent.

3. The average individual fruit weight between 7.5 and 8.1 g/pcs demonstrate as new romanian varieties can valorify climate conditions of experimentation area, being superior to the oldest varieties witch had the average fruit weight between 5-7 g/pcs.

4. All four varieties are suitable for intensive culture of sweet cherry in the NE part of Romania.

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