COMPARATIVE BEHAVIOUR FOR A NEW SWEET PEPPER ASSORTMENT FOR POLYTUNNEL, IN TÂRGU FRUMOS AREA

STUDIUL COMPARATIV AL UNUI NOU SORTIMENT DE ARDEI GRAS PENTRU SOLAR, ÎN CONDIŢIILE ZONEI TÂRGU FRUMOS

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Abstract. *In this paper is presented behaviour of five new sweet pepper cultivars for polytunnels, under production, from a family microfarm in Tg. Frumos area, Iasi county. In the period 2009 - 2010, were conducted observations and biometric measurements for the main agroproductive features ,early and total yield, harvest on dynamics etc. The best results were obtained for early production of cultivars Vedrana F1 (50.4 t / ha), Romatca F1 (44.6t / ha) and Bianca F1 (34.3 t / ha). For total production hybrids was remarked: Vedrana F1 (113.2 t / ha), Romatca F1 (99.4 t / ha) and Belladona F1 (84.2 t / ha).*

Key words: assortment, sweet peppers, comparative crop

Rezumat. *În lucrarea de faţă este prezentată comportarea a cinci cultivare noi de ardei gras pentru solarii, în condiţii de producţie la o microfermă familială din zona Tg. Frumos, judeţul Iaşi. În perioada 2009 – 2010, s-au efectuat observaţii şi determinări biometrice pentru principalele însuşiri agroproductive: producţia timpurie şi totală de fructe, dinamica recoltei etc. Cele mai bune rezultate pentru producţia timpurie au fost obţinute de cultivarele Vedrana F1 (50,4 t/ha), Romatca F1 (44,6 t/ha) şi martorul Bianca F1 (34,3 t/ha). Pentru producţia totală s-au remarcat hibrizii Vedrana F1 (113,2 t/ha), Romatca F1 (99,4 t/ha) şi Belladona F1 (84,2 t/ha).*

Cuvinte cheie: sortiment, ardei, cultură comparativă

INTRODUCTION

While promoting organic (biological) vegetable growing, the cultivar is the most important factor of production, which is directly related to the environmental plasticity and consumer preference (Stoleru et al., 2010). Mean while, the cultivar is also an element of biodiversity crops expression, under a permanent change in the assortment of cultivars (Dumitrescu, 1998). The paper present a relatively new variety assortment of sweet peppers for protected crop, consisting of five high production hybrid cultivars.

MATERIAL AND METHOD

The research was carried out during 2009-2010, at a family association (AF) Vavilov Mihai from Tg. Frumos Iasi county. It was studied a range of five hybrids of

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sweet pepper: Romatca, Fidelio / Belladona, Vedrana, Withney and Bianca as control. The experiment was placed in an individual polytunnels of 600 square meters. The soil prepariation and growing space were in accordance with conventional crops appropriate technologies (Munteanu, 2003).

Planting was done during the period 10 April to 15 Aprilie each year, using seedlings produced in pots with a diameter of 10 cm, with 55 days of age. Establishment of crop was based on a scheme of 20 rows in the strip, the plants being conducted with a single stem. Crop density was 27,000 plants / ha, according to the specific technology (Stoican and Lacatus, 1998). Experimental observations and measurements were made to ensure the implementation of biometric general characterization of the range. It were also analyzed early production (assessed on 30 July) and the total production at the end of the growing season. Production data were processed by specific methods (Saulescu and Saulescu, 1967).

RESULTS AND DISCUSSIONS

A brief characterization of agrobiological sets is shown in table 1. Precocity in the range studied can be said that the Belladona F1 and Romatca are very early F1 and the other three (Bianca F1, Withney and Vedrana F1) are early. In connection with the form of fruit, four fruits are block type and another one is conical (Withney F1).

Color of fruit at consumption maturity is yellow or green with shades open, whose average weight varies from 140 g (Withney F1) to 200 g (Belladona F1 and Vedrana F1). Early production of peppers produced in the conventional system varied from 32.4 t / ha (Withney F1) to 50.4 t / ha (Vedrana F1). Bianca F1 (control) obtained an early production estimated at 34.3 t / ha (table 2.).

Very significant positive differences than the control were obtained by Vedrana F1 (16.1 t / ha). Distinct significant positive differences than the control was obtained by Romatca F1 (10.3 t / ha).

Table 2

Early yield of peppers and significance of differences to control

Crt. no.	Variant	Early yield t/ha	% to control	Differences to control	Significance
1	Romatca	44,6	130,0	10,3	**
2	Fidelio/ Belladona	32,6	95,1	-1,7	
3	Vedrana	50,4	146,9	16,1	***
4	Withney	32,4	94,5	-1,9	
5	Bianca-Ct	34,3	100	-	

LSD 5% = 2,76; LSD 1% = 5,64; LSD 0,1% = 10,87.

The results of total production of pepper in the experience are shown in table 3. Ranged in very broad limits, given the cultural and ecological plasticity of the hybrid. The total production of pepper in 2009 ranged from 82.6 t / ha (Withney F1) to 113.2 t / ha (Vedrana F1), while Bianca control obtained an average yield) of 83.4 t / ha.

Table 1

Characterization assortment of peppers in comparative crop

Cultivar	Preco-city	Plant		Fruit characteristics			
		type of growth *	type of growth *	height (cm)	diameter (cm)	color	weight (g / pcs)
0	1	2	3	4	5	6	7
Romatca	very early	120-160	ID	9-10	8-9	light yellow	160-170
Fidelio/ Belladona	very early	120-170	ID	9-10	8-9	light yellow	160-200
Vedrana	early	160-170	ID	10-11	8-9	greenish yellow	160-200
Withney	early	110-145	ID	10-11	5-6	light yellow	140-150
Bianca-Ct	early	120-140	ID	8-9	7-8	light yellow	140-170

Reffering to the total production, very significant positive differences produced by Vedrana F1 hybrid (29.8 t / ha) and Romatca F1 hybrid (16.0 t / ha), by comparison with the control - Bianca.

Table 3

Total yield of peppers and significance of differences to control

Crt. no.	Variant	Total yield t/ha	% to control	Differences to control	Significance
1	Romatca	99,4	119,2	16,0	***
2	Fidelio/Belladona	84,2	100,9	0,8	
3	Vedrana	113,2	135,7	29,8	***
4	Withney	82,6	99,1	-0,8	
5	Bianca-Ct	83,4	100	-	

LSD 5% = 4,92; LSD 1% = 8,21; LSD 0,1% = 12,37.

Analyzing the dynamics of the calendar month and aggregate peppers at the end of each month, it is noted that in June, the largest early productions were gotten by Vedrana F1 hybrids (31.4 t / ha), Romatca F1 (29.8 t / ha) and Bianca F1 (23.0 t / ha) (table 4). The same three cultivars achieved high yields in early July; Belladona F1 varied in the variation limits of the control. In June and July, Withney F1 achieved the lowest production of peppers.

Table 4

Dynamics of peppers yield on months

Crt. no.	Variant	Calendar months						Total yield t/ha
		May	June	July	August	September	October	
1	Romatca	1,6	29,8	18,2	24,8	19,8	5,2	99,4
2	Fidelio/ Belladona	0,8	21,1	16,1	22,6	18,6	5	84,2
3	Vedrana	4	31,4	21,2	28,4	22,8	5,4	113,2
4	Withney	0,9	22,6	14,3	22,6	17,2	5	82,6
5	Bianca-Ct	2,1	23	14,4	21,7	17,2	5	83,4

Table 5

Dynamics of peppers cumulative yield on months

Crt. no.	Variant	Calendar months					
		May	June	July	August	September	October
1	Romatca	1,6	31,4	49,6	74,4	94,2	**99,4**
2	Fidelio/ Belladona	0,8	21,9	38	60,6	79,2	**84,2**
3	Vedrana	4	35,4	56,6	85	107,8	**113,2**
4	Withney	0,9	23,5	37,8	60,4	77,6	**82,6**
5	Bianca-Ct	2,1	25,1	39,5	61,2	78,4	**83,4**

In August and September hybrids performed relatively constant between 17.2 and 22.8 t / ha. Pepper yield Withney F1 and Romatca F1 achieved relatively constant throughout the growing season from it data presented in table 5. Regarding on cumulative production on the month, can say that the percentage of commercial production ranged from 45.07% (Belladona F1) 50% for Vedrana F1 hybrid.

CONCLUSIONS

1. Early peppers production in the range varies between 32.4 t / ha (Withney F1) to 50.4 (Vedrana F1).

2. Higher total yields, compared with control Bianca F1 (89.25 t/ha), have achieved very significant Vedrana F1 hybrids (113.2 t/ha) and Romatca F1 (99.4 t/ha).

3. Maximum amount of yield made in June and July (Romatca F1, Vedrana F1 and Bianca F1), August and September (Belladona F1). VedranaF1 and Romatca F1 cultivars during the growing season achieved constant production in all calendar months.

4. The largest fruits (average 200 g) were obtained from F1 and Vedrana Belladona F1.

5. The average fruit weight, shape, appearance, internal structure and other characteristics varied within normal limits, giving a high value range studied.

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