

COMPARATIVE BEHAVIOR FOR A NEW CARROT ASSORTMENT IN THE NE AREA

COMPORTAREA ÎN CULTURĂ COMPARATIVĂ A UNUI SORTIMENT DE MORCOV ÎN ZONA DE NORD-EST

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Abstract. *The purpose of this paper, is make it known for the NE area of the country, a new assortment of carrots, crossing traditional cultivars (Red Core Chantenay, Nantes) with new hybrids (Tito, Flam). The research was carried out in a Vegetable Stationary, in the climatic conditions of the Dorohoi area in Agricola Frugal farm Ltd. During the experimental period, were made observations and biometric measurements for main agro-productive properties: morphological and phenological characterization, amount of harvest and dynamics for the four cultivars. Regarding to the precocity, we can say that it ranges between 120 days (Tito F1) to 140 days Chantenay Red Core cultivar. Root length, will vary depending on the range of 14-18 cm (Chantenay Red Core) to 22 - 24 cm (Flam F1). The highest production was obtained by hybrid cultivars 34.72 t / ha at Tito and 48.15 t / ha to Flam.*

Key words: carrot, cultivars, yield

Rezumat. *Scopul lucrării de față este acela de a face cunoscut pentru zona de NE a țării, un nou sortiment de morcov, combinând cultivare tradiționale (Chantenay Red Core, Nantes) cu hibrizi noi (Tito, Flam). Cercetările au fost efectuate în cadrul unui Staționar Legumicol Experimental, în condițiile pedoclimatice ale zonei Dorohoi, ferma Agricola Frugal SRL. Pe parcursul perioadei experimentale s-au efectuat observații și determinări biometrice pentru principalele însușiri agroproductive: caracterizarea morfologică și fenologică, cantitatea de recoltă și dinamica acesteia pentru cele patru cultivare s.a. În ce privește precocitatea sortimentului, putem afirma că aceasta variază între 120 zile (Tito F1) până la 140 zile în cazul cultivarului Chantenay Red Core. Lungimea rădăcinii variază în funcție de sortiment de la 14-18 cm (Chantenay Red Core) până la 22-24 cm (Flam F1). Cea mai ridicată producție s-a înregistrat în cazul cultivarelor hibride 34,72 t/ha la Tito și 48,15 t/ha la Flam.*

Cuvinte cheie: morcov, cultivare, producție

INTRODUCTION

Enhancing of vegetables production in general and organic especially can run by providing technological measures, which involve the following items (Dumitrescu et al., 1998; Leonte, 1997):

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- choosing proper land for the species to be sowing;
- choosing an appropriate cultivar that is suitable for environmental and technological resources that can be insurance (Stoleru et al., 2012);
- compliance date of sowing, seed quantity and density, etc;
- proper maintenance;
- crop harvesting and valorisation

While promoting present vegetable growing, variety is perhaps the most important biological factor of production, which is directly related to ecological plasticity and consumer preference (Munteanu and Falticeanu, 2008).

At the same time, the cultivar is an element of expression biodiversity crops, under a permanent change in the range of cultivation (Dumitrescu et al., 1998; Hoza, 2008)

Present study submit a new assortment of carrot for high production, which are included in the official catalog of varieties of the EU.

For evaluating the quality of carrot roots thickened was determined the dry matter content.

The dry matter has a high importance. Every food is made up of water and dry matter. Water, through its presence in food, determines the quality and influence the stability of the product.

MATERIAL AND METHOD

Aim of our study was to establish the suitability of an assortment of carrot in conventional system in the conditions of Dorohoi area.

The biological material used was represented by an assortment of four cultivars of carrot: Tito, Flam, Chantenay Red Core, Nantes.

To ensure goal, was held a comparative experience as a crop we have the following objectives: morphological characterization; phenological characterization and characterization of agro productive assortment (Stan et al., 2001; Ciofu et al., 2004).

Carrot crop was established after a wheat crop. Soil preparation was carried out in accordance with the related technologies of conventional crops, using near 400 kg of NPK. Sowing was carried out on or around 04/17/2013 using treated seed. Crop establishment was performed with a precision seeder with two rows per billon, the distance between the billons 70 cm, at a depth of 1.5 - 2 cm using a quantity 3.5 kg seed / ha.

During 2013 there were made observations and biometric measurements for achieving the general characterization of the assortment. At the end of the growing season total production was analyzed for the four carrot cultivars.

Production dates were processed by scientific methods, using analysis of variance (ANOVA), as shown by the literature (Leonte, 1997).

Determination of dry matter was made by the oven drying method at a temperature of 103 ± 2 ° C (Beceanu, 2008).

RESULTS AND DISCUSSION

The characterization of the assortment in the Dorohoi area

A brief assortment agro biological characterization is presented in Table 1. In the assortment studied, it can be said that precocity varieties ranged from 120 days (Tito, Nantes), 130 days (Flam, Chantenay Red Core), which causes the carrot crop convey decrease in NE of Romania area, but in while ensuring a concentration of production in a very short period in order to promote semi-mechanized harvesting (Indrea et al., 2007).

Regarding to the production obtained from each cultivar, we can say that it within biological limits, but in terms of application of technologies, including the provision of three irrigation with rules 300 m³/ha.

The production potential varies widely from 28-32 t/ha (Chantheny Red Core) to 45-50 t/ha (Flam).

As for the biological characteristics of the species were traced: rosette height (cm) and number of leaves into rosette.

Rosette height during 2013 varied in the very small limits, between 40-45 cm (Chanteny Rred Core), 45-51 cm (Nantes), 47-52 cm (Tito), 48-55 Flam. The number of leaves from rosette varies between 17 to 21 (Chanteny Red Core) from 21 to 24 cm (Flam).

In relation with the root form we can say that this varies from cylindrical (Tito, Nantes) to cylindrical-conical (Flam, Chantheny Red Core). In terms of color at maturity we can say that two cultivars are red-orange (Flam, Chanteny Red Core), a bright orange cultivar (Tito) and an orange cultivar (Nantes).

Regarding to the root length, this ranges from 14 to 18 cm (Chanteny Red Core), 16-20 cm (Nantes), 20-24 cm (Tito) up to 22-24 cm (Flam).

In terms of quality, the content of dry matter varies from 9.8 (Chanteny Red Core, Nantes) to 10.2 (Flam) to 10.3 (Tito).

Table 1

The characterization of the carrot assortment from comparative crop

Cultivar	Precocity	Plant characteristics		Root characteristics						Yield production t/ha
		rosette height (cm)	no of leaves	form	length	colour		dry matter %	green shoulder	
						exterior	inside			
Tito	120 - 130 days	47	21	cylindric	20- 24 cm	dark orange	dark orange	10,3	less apparent	32-35
Flam	130 - 140 days	55	24	cylindric-conical	22-24 cm	red-orange	orange	10,2	absence	45-50
Chanteny Red Core	130 - 140 days	40	17	cylindric-conical	14-18cm	red-orange	orange	9,8	apparent	28-32
Nantes	120 - 130 days	45	19	cylindric	16-20 cm	orange	light orange	9,8	absence	30-35

Results on the total production of carrot

The total production of carrot analysed on 9/25/2013, obtained in the conventional system, ranged from 29.46 t/ha on Chantenay Red Core variety to 48.15 t/ha in the case of hybrid Flam (Table 2). The difference compared to the mean production from experience in this case (18.69 t/ha), is considered to be positive, very significant.

Chantenay Red Core cultivar obtained the lowest production (29.46 t/ha), the difference to the average experience (-6.67 t/ha) being negative significantly. Negative differences from the average experience also obtained by Nantes cultivar (-3.95 t/ha).

Cultivar Tito has achieved close to the average production experience and production increases obtained are considered non-significant.

Table 2

Carrot production and significance of differences to control

Cultivar	Production (t/ha)	Difference to mean (t/ha)	Relative production (%)	Significance of differences
Tito	34,72	-1,41	96,1	ns
Flam	48,15	12,02	133,3	***
Chantenay Red Core	29,46	-6,67	82,00	0
Nantes	32,18	-3,95	89,1	0
Experience mean (Control)	36,13	0	0	-

ns-non-significant

LSD 5% =3,64 t/ha

LSD 1% = 7,35 t/ha

LSD 0,1 % =11,87 t/ha

CONCLUSIONS

The study for the carrot assortment highlight that cultivation technology does not differ in the comparative crop in the Dorohoi conditions area, but yields are appreciable to the upper biological potential.

From measurements made, rosette height ranged from 40 cm (Chantenay Red Core) to 55 cm (Flam). The difference into cultivar Flam production from the average experience (12.02 t / ha) it is considered to be positive, very significant.

Depending on the production quality, Tito cultivar presents the highest share to preserve the winter, compared to other varieties studied, due to higher dry matter content.

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