

RADOST – THE FIRST BULGARIAN TABLE BEET VARIETY

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The variety is certified as an original variety in 2008, after 2-years tests in the ecological fields of IASAS. During the period of tests the mean excess over the Standard Bordo-60 was 12%. The variety has been tested in 3 locations under irrigation conditions. Radost is a multigerm diploid population, obtained through crossing and following individual and individual-family selection of table beets of the Institute gene pool. The form of the root is cylindrical-elongated with red coloring of the outer part of the root. The inner part is red colored, with 6–8 concentric circles with a crisp consistence. Radost has relatively good resistance to powdery mildew and mean resistance to *Cercospora*. The variety is not tolerant to the viral disease Rhizomania.

Key words: table beet; variety; morphology; yield

РАДОСТ – ПРВ БУГАРСКИ ВИД НА ТРПЕЗНО ЦВЕКЛО

Видот е сертифициран како оригинален во 2008 година по двогодишно тестирање на еколошките полиња на ИАСАС. За време на контролниот период приносот во споредба со стандардот Бордо-60 беше за 12% повисок. Видот беше тестиран на 3 локации, под исти услови на наводнување. Радост е мултигерминативна диплоидна популација, добиена преку вкрстување и понатамошна индивидуална и индивидуално-фамилијарна селекција на трпезни цвекла на генската колекција на Институтот. Формата на коренот е цилиндрично-овална, со црвено обојување на надворешниот дел од коренот. Внатрешниот дел е црвено обоен, има 6 до 8 концентрични кругови и ’рскава конзистенција. Радост има релативно добра резистентност на мувли, но главно е резистентен на *Cercosporose*. Видот не е толерантен на вирусното заболување Rhizomania.

Клучни зборови: трпезно цвекло; вид; морфологија; принос

INTRODUCTION

Both leaves and roots of the table beet are extremely rich in nutrients, pigments and vitamins (Agapov, 1976).

The content of betaine is of high importance. This matter is close to the structure of choline and lecithin which are known as regulators of metabolism. The table beet is a source of vitamin U which has an antiulcer action. This vegetable takes the next place after the seaweeds by content of iodine. All these features determine its beneficial influence on metabolism and the illness of thyroid gland and obesity. By the content of vitamin C the leaves of the table beet compete with citrus fruits (Azhigoev, 1981).

The table beet is rich in hydrocarbons, mineral salts, organic acids and vitamins. The sugar content of the root is up to 8 – 10%, proteins 1.3 – 1.4%, vitamin C (ascorbic acid) up to 20 – 30 mg and vitamin B₁ (thiamine) 10 – 12 mg of 100 g raw matter. Besides, the table root contains vitamins B₂, B₆, P, PP, folic acid and panthotenic acid.

At present, according to the medical data, the content of betanine and betaine in the table root contributes to the lowering blood pressure, improving the metabolism of fatty acids, delaying arteriosclerosis and retarding the growing of malignant tumors.

The table root is a cultivar which is characterized by high yield. Our tests show that under no irrigation the root yield is from 3500 to 5300

kg/da. Under irrigation the root yield is almost doubled. The resistance of the table root to the important economic diseases like cercosporose and powdery mildew is lower in comparison with the sugar beet (Varbanov, 2002).

MATERIAL AND METHODS

The first Bulgarian table root variety has been created by the method of individual -family selection by tracing the progeny. The Radost variety has been tested for three years in the experimental fields of the Agricultural Institute – Shumen, on carbonate chermozem.

The Radost variety was in the State variety trial in 2005 and 2006. The variety was acknowledged as an original cultivar variety in 2008 after the approval of the Expert Commission and order of MAF (Ministry of Agriculture and Food) No. 12–8 dated March 20, 2008.

RESULTS AND DISCUSSION

The shape of the root is elongated and cylindrical. The skin of the root and its inner part is red. The inner part contains 6–8 concentric circles with slight lightening. The leaf rosette is semi-erect. At the beginning of vegetation the leaf stems and the leaves are dark green with red colouration of the veins. At the end of vegetation both the leaf stems and the leaves are dark red.

$\frac{1}{2}$ to $\frac{1}{3}$ of the root protrudes over the surface soil. The mass of 1000 seeds is 24–34 g.

The Radost variety has a relatively good resistance to powdery mildew and cercosporose but it is not tolerant to rhizomania.

The variety was tested in three locations under irrigation (Table 1). The Bordo-60 variety was used as a standard. During the first year of testing the highest root yield was registered in the experimental field of Negovan – 11392 kg/da (Table 1).

The high potentialities of the variety were confirmed in the experimental field of the station in Plovdiv. The high potentialities of the variety were confirmed in the experimental field of the station in Plovdiv – 10403 kg/da.

Average for two years the root yield registered for the Radost variety was 8230 kg/da and for the Bordo variety 7349 kg/da. The excess over the standard for the testing period was 12%.

The chemical analysis showed that the dry matter content in the root varied from 8,6 to 13.2%. The content of the vitamin C in 100 g beet squash was about 10 mg, and of vitamin B 5.4 mg. 10403 kg/da.

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Table 1

State variety Trial of the table beet variety Radost

Variety	Experimental station						Average	
	Plovdiv		Samovodene		Negovan		kg/da	%
	kg/da	%	kg/da	%	kg/da	%		
2005								
Bordo 60-St	9944	100	4948	100	10017	100	8303	100
Radost	10403	104.6	6558	132.5	11392	113.7	9451	113.8
2006								
Bordo 60-St	6059	100	4306	100	8819	100	6395	100
Radost	6222	102.7	4601	106.8	10208	115.7	7010	109.6
2005 – 2006								
Bordo 60-St	8001	100	4627	100	9418	100	7349	100
Radost	8312	103.9	5579	120.6	10800	114.7	8230	112.0

CONCLUSIONS

The first Bulgarian table beet variety has high potentialities. The root yield under irrigation reaches 11393 kg/da. The excess over the standard by this trait average for two years is 12 %.

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