

CHARACTERISTICS OF PRESERVATION AND PROTECTION OF OLD AUTOCHTHONOUS TOMATO VARIETIES

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Abstract

In 2007, the Agricultural Extension Service "Sombor" in cooperation with the Ministry launched the pilot project "Save the old Vojvodina vegetable varieties". A large number of elementary school students participated in the campaign, and 5296 samples were collected. All samples have been determined, entered into the database and sown on a sample field. Every year, an analysis of selected samples was done with short descriptions of the varieties. In previous years, we selected the most interesting varieties and described them in more detail. In this paper, we would like to present the old authentic varieties of tomatoes that we singled out as the most interesting.

Keywords: *old variety, tomato, vegetable production, yield*

1. INTRODUCTION

Based on the reputation of numerous nations with developed social consciousness that have long since developed programs that protect the most endangered varieties and ecopopulations of plant species from permanent disappearance, the Agriculture Extension Service "Sombor" in cooperation with the Provincial Secretariat for Agriculture, the Ministry of Education and the School Administration in Sombor and Zapadnobački district In 2007, she launched the Pilot Project "Save the old Vojvodina vegetable varieties". The action was launched on 03.12.2007. year and lasted three weeks until 22.12.2007.

The goal of the project was to save the old domestic varieties of vegetables that are traditionally grown in our area from permanent loss. 22 elementary schools with 3163 students participated in the campaign. During the three weeks of sample collection, 5,296 samples of vegetables and other plant species were collected, and the total number of students who actively participated and brought samples was 617. The samples had to be marked with information about the student's name and surname, class, school, variety name, address, date of seed collection, etc. At the end of the seed collection campaign, teachers and schools were awarded with valuable prizes (laptop, computer, projector, etc.) as a sign of gratitude for their active participation in this important project. 6 schools, 28 students, 3 teachers and 1 best class were awarded.

2. MATERIAL AND METHODS

2.1 Methods

From 2011 until today, the Agriculture Extension Service "Sombor" has been growing the most interesting old autochthonous varieties of vegetables on its experimental field. During the last year, the most interesting plant species were sown on the experimental field of PSS "Sombor": lettuce (60), tomatoes (18), peppers (25), hot peppers (19), melons (6), watermelons (10), onions (4), carrots (7), dill (8), okra (4), popcorn (50), pumpkins (13), basil (60), cabbage (10), etc. During the growing season, in certain phases, all plants were evaluated according to DUS descriptor for determining the uniformity and stability of the variety. After harvest or harvest, fertility parameters are determined for each variety, depending on the plant species: measurement of yield, moisture, dry matter, determination of sugar content, determination of size, weight, etc.

Data on qualitative and quantitative characteristics are found in the database, and each variety documented with a large number of photographs. According to our many years of experience,

monitoring in the experimental field and evaluation of fertility parameters and results, the old varieties are not behind the hybrids. What is very important is that the old varieties have shown great resistance to certain pathogens, which gives them a great chance in the future, given the great pressure and increase in the number of pests and diseases due to climate change, production growth, etc. In addition to monitoring the vegetation, evaluating production parameters, during production the health status and resistance of varieties and populations to the most important pathogens and diseases was assessed.

3. RESULTS AND DISCUSSION

3.1. Results in 2022

Table 1. Results with evaluations of yield and fruit parameters in 2022 years

variety	mass/g	type	size	color outside	firmness	length/cm	width/cm	color inside	thickness pericarp/cm	section	number of chamber	sacch mass %
B 2134	424,0	heart shaped	large	rose	medium	10,0	8,5	red	0,5	heart shaped	12	5,0
B 1800	365,7	heart shaped	large	rose	medium	4,5	10,0	rose	0,4	flat	11	5,0
B 26	457,9	heart shaped	large	red	hard	4,7	8,0	red	0,5	flat	9	4,0
B 2034	464,9	heart shaped	large	rose	medium	7,5	9,5	rose	0,6	heart shaped	8	6,0
B 1970	116,2	round	medium	orange	medium	4,6	6,0	orange	0,5	round	5	6,0
B 2318	163,7	round	medium	red	hard	5,3	6,5	red	0,4	round	6	6,0
A 326	185,0	round	medium	red	medium	5,0	7,2	red	0,4	flat	4	5,4
A 2517	131,6	round	medium	red	medium	5,0	6,0	red	0,6	round	3	5,0
B 1095	183,4	round	medium	red	hard	5,0	7,0	red	0,7	round	6	6,0
A 914	160,0	cylindrical	medium	red	medium	5,0	7,0	red	0,6	flat	7	4,0
A 2266	145,0	cylindrical	medium	red	medium	6,2	4,0	red	0,7	flat	3	4,5
A 2184	102,4	cylindrical	medium	red	hard	7,5	4,5	red	0,8	cylindrical	3	6,0
B 1593	180,0	tomato pepper	medium	yellow	hard	4,5	7,6	yellow	0,8	square	2	5,0
B 1152	155,7	tomato pepper	medium	yellow	hard	6,0	7,0	yellow	0,7	square	2	4,0
B 8	13,3	cherry	small	yellow	hard	3,6	2,5	yellow	0,4	ovoid	2	6,0
A 486	11,5	cherry	small	yellow	hard	4,2	2,3	yellow	0,3	pear	2	4,0
B 1420	19,9	cherry	small	red	hard	3,2	3,0	red	0,4	ovoid	2	7,0

Old variety tomato B 26

The weight of the fruit of variety B26 was 457.9 grams. It is characterized by a heart-shaped shape of large size and red color. Very firm fruit, 4.7 cm long and 8.0 cm wide with a red color inside. The shape on the longitudinal section is flat with a large number of chambers 9. The average sugar content was 4.0%.



Old variety tomato B 2134

The weight of the fruit of variety B2134 was 464,9 grams. It is characterized by a heart-shaped shape of large size and rose color. Very firm fruit, 7,5 cm long and 9,5 cm wide with a rose color inside. The shape on the longitudinal section is heart shaped with a large number of chambers 8. The average sugar content was 6.0%.



Old variety tomato B 2318

The weight of the fruit of variety B 2318 was 163,7 grams. It is characterized by a rounded shape of medium size and red color. Very firm fruit, 5,3 cm long and 6,5 cm wide with a red color inside. The shape on the longitudinal section is rounded with a large number of chambers 6. The average sugar content was 6.0%.



Old variety tomato B 1593

The weight of the fruit of variety B 1593 was 180,0 grams. It is characterized by a tomato pepper shape of medium size and red color. Very firm fruit, 4,5 cm long and 7,6 cm wide with a red color inside. The shape on the longitudinal section is square with a number of chambers 2. The average sugar content was 5.0%.



Old variety tomato B 1420

The weight of the fruit of variety B 1420 was 19,9 grams. It is characterized by a cherry shape of small size and red color. Very firm fruit, 3,2 cm long and 3,0 cm wide with a red color inside. The shape on the longitudinal section is egg shape with a number of chambers 2. The average sugar content was 7.0%.



Old variety tomato B 8

The weight of the fruit of variety B 8 was 13,3 grams. It is characterized by a cherry shape of small size and yellow color. Very firm fruit, 3,6 cm long and 2,5 cm wide with a yellow color inside. The shape on the longitudinal section is egg shape with a number of chambers 2. The average sugar content was 6.0%.



Old variety tomato B 1970

The weight of the fruit of variety B 1970 was 116,2 grams. It is characterized by a rounded of medium size and orange color. Very firm fruit, 4,6 cm long and 6,0 cm wide with an orange color inside. The shape on the longitudinal section is rounded with a number of chambers 5. The average sugar content was 6.0%.



Old variety tomato A 914

The weight of the fruit of variety A 914 was 160,0 grams. It is characterized by a cylindrical of medium size and red color. Very firm fruit, 5,0 cm long and 7,0 cm wide with a red color inside. The shape on the longitudinal section is cylindrical with a number of chambers 7. The average sugar content was 4.0%.



4. CONCLUSIONS

In previous years, we witnessed major climate changes, high temperatures, lack of precipitation, occurrence of diseases, increased use of pesticides and a large impact on agricultural production, and after extensive research in the experimental field and laboratory, we can say with certainty that old varieties can respond to this great challenge.

Also, by exchanging seeds, we try to maintain ties and join forces with promoters of old varieties in order to bring the importance of preservation and production of old autochthonous varieties closer to agricultural producers. Further plans related to preservation are certainly developing more and more every year, and we have excellent plans for further analysis of old varieties, promotion, creation of catalogs and advertising material.

Also, tomatoes are good for processing, not only red but also yellow. We got yellow cherry tomato juice, which is just as tasty as the red one, except that it is yellow in color. You can also get sweets from yellow cherries. In addition to juicing, we tried to dry red cherries, and we got very good results with drying, that is, dehydration, which can serve as a healthy snack. The possibilities of processing are wide.

Our goal is to preserve the old varieties from oblivion because they have adapted to people and the environment for centuries, and have great cultural significance because songs and customs are associated with them, and to include as many agricultural producers as possible in order to expand production with autochthonous varieties. Today, with the growing trend of organic producers, the chance for old varieties also grows, because they are the basis of this production.

REFERENCES

- Ilić Z., Falik E., Dardić (2009). Harvesting, sorting, packaging and storage, Novi Sad, 269-291
- Radić Đ. 2009. Cultivation of field crops., Belgrade, 5 pp.
- Radić Đ. 2011. Truck farming, Sombor, 244 pp.
- Ilin Ž., Sabadoš V. (2010). Designation of maintainers for domesticated varieties from the register of agricultural plants, Belgrade 220-250
- Sabadoš et al., 2019. Land agriculture and rural development, Sombor, 306 pp.
- Kozbašić, 2019. Energy portal. "The bank of genes and seeds of old varieties of fruits and vegetables is expanding its capacities throughout Serbia"
- BANKA GENA I SEMENA STARIH SORTI VOĆA I POVRĆA PROŠIRUJE KAPACITETE ŠIROM SRBIJE <<https://www.energetskiportal.rs/banka-gena-i-semena-starih-sorti-voca-i-povrca-prosiruje-kapacitete-sirom-srbije/>>

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