86' and 'Novinca Pridnestrovia'). The shape of the fruit varied according to the genotype from round to cylindrical. From the bibliographic data it was known that the thickness of the pericarp was an important feature that depended on the quality of the fruits. In this contest, the tomato lines had more pronounced values (0.6–0.8mm) than the check (0.4–0.7mm).

According to the results of the mesocarp thickness, there was an increase compared to the check variant ('L.20', 'L.25', 'L.49') compared to the check variant *('Peto-86', ,Novinca Pridnestrovia' and 'Elvira'*). It was found that tomato lines with thickness indices of pericarp greater than 6 mm and the thickness of the 8 mm mesocarp were destined for the transport of the fruits. An especially important role was for the character of the fruit pedicel. The pedicel was without and with a geniculate joint where some fruits were easily detached from it while other were detacheed more difficult.

Due to the data obtained on the biochemical quality of the fruit, it was clear that the content of dry substances was largely dependent on the conditions of the year. Under dry conditions, the dry matter content was high and in the rainy weather dry matter wais low in fruit. However, in some lines the level of dry matter was greater than that of the check varieties.

Concomitantly, the fruit sugar content in some lines showed an advantage of 6.23–6.43 % compared to the check varieties of 5.23–5.63 %. Productivity on promising lines was peaked at 49.5–58.7 t/ha. compared to 33.9–50.7 t/ha. Analysis of *in vitro* tomato populations demonstrated that remote hybridization was indeed a method incompatible with other methods in the transformation of nature into heredity of crop plants.

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VARIABILITY AND EQUALITY OF BIOCHEMICAL QUALITATIVE CHARACTERISTICS IN NEW TOMATO VARIETIES OBTAINED *IN VITRO*

0ne of the most important issues of breeding is development of new varieties in which to assemble more valuable characters, high productivity, increased resistance to unfavorable environmental factors and precocity with large and qualitative fruits. However, to accelerate the process of creating such varieties, it is necessary to apply new selection methods and technologies.

We mentioned that a real perspective in this aspect was presented by the modern biotechnology methods and techniques, based on the principles of molecular genetics, genetic and cellular engineering, cell cultures and vegetal tissues, accelerated micro-propagation, induced variability and somaclonal variability, remote hybrids.

Remote hybridization methods with the mobilization of the spontaneous genofond and the application of the *in vitro* culture allowed us to settle many issues in the amelioration process. Through classical hybrids, efficient capacities have been transferred to the activity of plant regeneration by crossing spontaneous species with the crop species through the embryo calus culture.

The hybridization of different genetically-stable species varied according to the degree of kinship between them, with the transmission of genetic information that results in some valuable economic carcasses from spontaneous species to culture species. Thus, the emergence of biotechnologies, especially *in vitro* culture, produced a real revolution in the process of improving vegetable crops and other agricultural species.

The research was carried out within the Plant Resistance Genetics laboratory of the Institute of Genetics, Plant Physiology and Plant Protection. As a subject of study, 7 varieties of tomato were produced, created through interspecific crosses and application of *in vitro* culture. *('Iulihirsutian', 'Iuliperuan', 'Anatolia', 'CerryDani', 'Jacot')* approved in the Republic of Moldova, ('*Flacara*' *and* '*Mia*') were tested at the State Commission for Testing Plant Varieties.

The evaluation of the native varieties was carried out according to the most valuable biochemical qualitative indices (dry matter content, sugar content, ascorbic acid acicide content, titratable acidity and sugar/acidity ratio). As a control variety, the varieties ('*Solearis*', '*Elvira*', '*Peto-86*' *and* '*Novinca pridnestrovia*') were used. At the assembly of experiments there were used seeds and seed culture. Estimating the dry matter content and the percentage of sugar in tomatoes was performed using the refractometer.

As a result of the application of remote hybrids and in vitro culture, varieties *('Iulihirsutian', 'Iuliperuan', 'Anatolie', 'CerryDan'i, 'Jacot'*) approved in the Republic of Moldova *('Flacara' and 'Mia'*) were tested at the State Commission for Testing of Plant Varieties.

The results of the investigations showed that local tomato varieties surpassed the check varieties ('*Solearis*', '*Elvira*', '*Peto 86*' *and* '*Novinca pridnestrovia*') by the following characters – the dry matter content, sugar content and total acidity. As a result of the remote hybridization the interest for the breeders also provided the spectrum of genetic heredity variability, which increases the efficiency of selection of genotypes with high productivity and increased resistance to environmental stressors. One of the main tasks of the improvement was the gorgeous fixing of several characters (productivity, precocity and high quality of fruit to stress factors (drought and low positive temperatures).

The study of the obtained results demonstrated that the limits of variability of biochemical components content, which determined the quality of the fruits, were very large. Of particular interest was the early average varieties characterized by an increase in the dry matter content, eg. the latter in the variety ('*Iuliperuan'*) increased by 17 % compared to the check variety '*Solearis*' and '*Iulihirsutian*' by 20 % against the check variety '*Elvira*'). These

varieties possessed superior qualities of the dry matter content with the variability of 13.33 % and 14.13 %. In late varieties ("Anatolie and Jacotta") the variation coefficient oscillated between 12.03 to 8.14 %.

The early variety ('*CerryDani*') exceeded the check variety ('*Peto-86*') by 14.24 %. Concerning the percentage of sugar content the maximum values against the check varieties accumulated the early average varieties.

The sugar content of the tomato varieties constituted 5.32 to 7.10 % with different values of the variation from 5.86 to 10.63 % compared to the check varieties of 4.89 to 6.39 % as well as the coefficient of variation 5.87 to 10.79 %.

The use of the genetic potential of spontaneous forms was also of great importance for increasing the size, shape and quality of the fruit with high vitamin C content.

Biochemical determinations of ascorbic acid (vitamin C) were also of great importance because they determined the quality of fruits that had high taste qualities. The biochemical content of ascorbic acid in tomato fruits showed a very high variability. Noteworthy that the indices of vitamin C content in tomato varieties formed the limit of variability of 9.66 to 34.15 % compared to check varieties of 8.43 to 24.03 %. .

In assessing new tomatoe varieties the ratio of sugars to acidity was a very important one, because this indice determined the taste properties of the fruits.

Based on the data obtained previously and taking into account the specific biochemical properties characterized by the accumulation capacity of the maximum volume of dry matter, sugar and, in particular, ascorbic acid (vitamin C), the varieties mentioned were to be used in the improvement programs as donors of valuable biochemical peculiarities of the fruits.

According to the investigations carried out by the application of *in vitro* culture, there was a harmonization of recombinant genes, possessing some precious qualities that allowed creating high performance varieties, fruits with high taste qualities, distinct technological qualities and increased resistance to drought, low positive temperatures and diseases.

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РІЗНОМАНІТНІСТЬ КОРМОВИХ І ГАЗОННИХ ТРАВ ПЕРЕДКАРПАТТЯ

Головна особливість землеробства України на сучасному етапі полягає у виробництві продукції рослинництва при обмежених витратах антропогенної енергії і збереженні довкілля від процесів деградації і забруднення. Біорізноманіття, крім його самодостатньої цінності, постачає людство усім необхідним для існування. Воно забезпечує функ-