

Armenia: A Country Where They Have Been Engaged in Tomato Selection and Breeding of New Varieties for 90 Years

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The widespread occurrence of tomato in many countries of the world and its specific weight in gross vegetable production may be explained by its peculiarities of its growth, development, fruit giving and high yield and use of its fruits in various ways (fresh, canning of whole fruits, products of differently concentrated tomato, dietary canned products and so on), as well as by its biologically high value, gustatory and high qualitative properties (sugar content, vitamins, microelements, mineral salts) [1]. According to Grincharov's (1970) data tomato fruits contain 5-6% of dry substances, 50% of which is soluble sugar (mannose), 0.5% of organic acid, 0.84% of cellulose, 0.19% pectic substances, 0.95% wet protein, 0.2% fats and essential oils, and 0.6% mineral salts [2]. Fruit having such favourable chemical composition made tomato high valuable in general and a source of dietary food in certain cases. Selection works also impacted the leading role of tomato, thanks to which various sorts and hybrids have been created in the world providing opportunity to meet the demand of agricultural production in different countries at significant rates [3]. Tomato have medical value and very important to use especially in increasing pathogen action of radioactive factors in climate change and deterioration of immunity of human (organism) [4].

History

There are no exact dates of introduction of tomatoes in Armenia. Tomato is cited only among the cucurbits crops cultivated for "home needs" in the Agricultural Statistical Information of Yerevan province in 1870. Tomato is also cited in Ghevond Alishan's "Armenian vegetables" (1985) book. According to Professor G.P. Grdzelyan tomato was cultivated in Transcaucasia (Georgia) starting from the 70s of the 19th century and was famous among the population as Rusuli badrejan (rusul's eggplant) name [5]. Our republic was also involved in selection works of tomato. Starting from 1932 a number of starting forms have been formed from the local population of tomato which according to Ananyan (1965) was formed in the result of importing and mixed cultivation of some ancient sorts (Yuvel, John Ber, Chudo Rinka, Fikarazzi, Ponderosa, Humberg and others). And the first Armenian variety, Anahit, was created through the selection of the mentioned sorts. Under A.Ananyan's guidance and immediate participation a number of Armenian valuable sorts (Yerevani 14, Noviy Anahit 19, Haykakan shtambovi 152, Masisi 202, Hobelyanakan 261, Ararati 15, Hrazdani, Echmiadzni, Arax, Aramus, Zvartnots) through selection works [5-6].

Genetic resources and breeding methods used

For almost 90 years, the local landrace forms, the breeding material of Vavilov Research Institute, AVRDC, imported from different countries have been studied in the republic: wild forms, varieties of different ecological and geographical origins, hybrids, mutants. The best donors were selected and used in the list of crossbreeding. Classic and modern selection methods were used in breeding. Pedigree, mutagenesis, individual selection, backcross, polycross, improvement methods were used.

1932-1980	1980 - 2005	2005- 2023
    	   	      

Outcome

Thanks to breeding works, more than 50 cultivated varieties of tomato were bred, which were widely distributed in our republic and beyond its borders. The varieties of 1932-1980 are mainly large, round and red in color, which were used both fresh and in processing. In the years 1980 - 2005, varieties with elongated plum shape and red color were also bred for processing. From 2005-2023, fresh, processing, cocktail, cherry and daterino tomatoes of various shapes and colors were bred [7-13]. At present, the processes of new tomato varieties and hybrids are ongoing.

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