
BIOLOGY AND GROWING OF TOMATO VARIETIES AND HYBRIDS

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Annotation

Initially, the tomatoes were yellow, then they were brought to Europe, and already there, after a couple of hundred years, they acquired the familiar red color. Today in the world there are about 11 thousand varieties that differ in size, shape, and color.

The article presents brief data on agricultural technology, varietal assessment based on the achievements of agricultural science, and the practice of the best seed farms.

Keywords: Tomato, tomato, selection, seed production, bush, agricultural technology, variety, hectare.

Tomato fruits have high taste and nutritional qualities: they contain vitamins, mineral salts, and organic acids. They are widely used fresh and canned in cooking.

About half of all produced tomatoes are used fresh. The rest go for processing at canning factories. The main types of canned tomato products are puree, paste, and juice [1].

Tomato is a light-loving and heat-loving plant. The optimum temperature for its growth and development is +22 +26°C. When the temperature drops to +16°C, the plants stop flowering, and at +12°C they stop growing. After frost, the tomatoes die.

The best predecessors of tomatoes are leguminous plants, perennial herbs, cucumbers, onions, and cabbage. It is not recommended to plant tomatoes after other nightshade crops and even place fields next to them. You can return tomatoes to the same place no earlier than after 3-4 years [2].

Need Prepares **soil for tomatoes** in the fall, generously adding garden compost, crushed eggshells, and ash. **Tomatoes** respond well to a high content of organic matter, nitrogen, and potassium, unlike most vegetables. Wood ash is alkaline and contains 5% potassium.

The correct **formation of a tomato bush** is one of the most important **conditions for its cultivation**. First of all - this **pinching climbing tomatoes** - pinching side shoots on them. Indeterminate tomatoes can be grown in one, as well as in 2-3 stems.

To read more about the formation of a tomato bush in accordance with its type, see the link in the first paragraph.

Tomato diseases are a big problem when growing this southern crop in Uzbekistan, especially in **open ground**. The most common and dangerous diseases of tomatoes: are late blight, fungal infections, brown spots, vertex rot, and tobacco mosaic. Most **tomato diseases** are provoked by rain, lack of heat, and sun. The combination of cold and rain can be absolutely detrimental to **tomatoes**.

If any element is missing in the soil or there is too much of it, this may affect the appearance of the bushes. For example, if there is little sulfur in the soil, then the foliage on the bushes will turn red or turn yellow, while the shoots will become very fragile. If there is not enough boron in the soil, then the shoots at the point of growth will turn black, the cuttings of young leaf plates will become brittle, and brown spots will form on the surface of the fruit. If there is not enough molybdenum, then the leaf plates will turn yellow and wrap up, also because of this, the bushes can be affected by chlorosis, as with a lack of iron, when the color of the foliage changes to almost white, while the tomatoes do not ripen, and their growth stops. If there are signs of a shortage of any of the elements, the bushes will need to arrange top dressing on the foliage, while using a mixture that contains the missing element.

Research institutions in Uzbekistan in recent years have achieved significant success in the field of breeding and seed production of vegetable crops. They develop methods for growing seeds, improve breeding, and local varieties released in the given zone, which they hand over under contracts to agricultural sector offices for further reproduction in seed farms.

A wide network of breeding experimental stations and variety testing plots is constantly working to develop new highly productive clones, populations, hybrids, lines, and varieties of tomatoes adapted to local conditions.

High yields are obtained from hybrids and varieties grown locally. But imported or induced seeds of varieties give a higher yield than local ones.

With poor agricultural technology, the valuable qualities of a variety can be gradually lost, therefore, according to each hybrid and variety of tomato, it is necessary to develop a specific agricultural technology. Irrigation is an integral part of the system of agrotechnical measures in the natural zones of Uzbekistan, where agricultural crops are not sufficiently supplied with water.

The pyrotechnics of tomatoes for seeds is similar to the agrotechnical of this crop for food purposes. Tomatoes for seeds in Uzbekistan can be grown both by the seedling method and without seedling culture - by sowing seeds in the ground. Tomatoes need to be grown on structurally fertile soils, as well as seasoned with mineral and organic fertilizers.

When placing seed crops of tomatoes on irrigated lands in all regions of the republic, potatoes and cotton are good predecessors, since a large amount of mineral and organic fertilizers are usually applied under them.



Table 1 Some zoned varieties of tomatoes

(Open ground)

<i>Name varieties</i>	The degree of responsiveness of varieties to fertilizers	<i>Code of the country</i>	<i>Year of Inclusion in the Register</i>	Harvest from 1 centner/ha
Behram F ₁	Very high	NL	2018	350
Kurkam	high	USD	2018	330
ruby cherry	Very high	USD	2018	380
Miracle F ₁	average	IN	2018	300
Yulduz	Very high	USD	2018	340
Yutuk	Very high	USD	2018	360
Ayvaz F ₁	average	NL	2017	290
Matonat	Very high	USD	2018	355
Alliance F ₁	average	FR	2010	310
NPT 404 F ₁	average	NL	2017	320

Note

	High yielding varieties
	More resistant to pests and diseases
	Fruits of good taste and commercial qualities.

The main measures for the care of seed crops of tomatoes are the systematic loosening of row spacings, weed shelves in rows, the formation of a bush, top dressing, and watering.

In the spring, before sowing, harrowing and 2-3 pre-sowing cultivations are carried out to kill weeds. If the plowing is strongly compacted, chiseling or even plowing should be applied, followed by shallow cultivation, and, if necessary, thinning or rolling.

Farms receive 35-40 kg of seeds per hectare, but advanced seed farms collect 100 or more kilograms of seeds of good sowing qualities. In the farm named " Khairikhon Yuldash » of the Andijan district of the Andijan region in 2019, on an area of 8 hectares, a crop of seeds of the Yulduz variety of tomatoes was achieved at 130 kg per hectare.

When growing vegetable seeds, it is important not only to maintain the high quality of the variety but also to improve them. The main condition for obtaining high-quality tomato seeds is high agricultural technology.

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