

IMPORTANCE OF IRRIGATION IN STRAWBERRY GROWING IN UZBEKISTAN AND ITS PROSPECTS

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Abstract. This article provides information on the history of strawberry plant development in Uzbekistan, status of strawberry production worldwide, cultivation technology of local and introduced varieties, productivity, and classification of promising varieties.

Key words: Strawberry, variety, seedling, state register, variety classification, fruit.

Introduction. There are more than 50 types of strawberries in the world, of which the forest, mountain, plain, Sakhalin species are found in Russia, and the eastern Bukhara species are found in Central Asia. The indicated species are not of great industrial value, but the inhabitants of these regions eat their fruits. Types of strawberries called forest, Sakhalin and kulubnika are used in selection works to create immune, winter-resistant, and disease-resistant varieties. These species are widespread in the European part of Russia, the Far East, Yakutia, Sakhalin. Flowers and fruits are small.

Bukhara strawberry can be found along streams and ditches in the Pamirs. The bush is 6-15 cm low, the leaves are broad-backed, egg-shaped, short-ribbed, and the edges are large-toothed. The inflorescence has few flowers (1-5 pieces), the inflorescence is thin, hairy, and the flowers and fruits are small.

The large-fruited strawberry was created mainly by crossing the Chilean type with the Virginia type, and is widespread. It is distinguished by its high yield and taste.

From 2012 to 2016, the production volume of strawberries in the world increased by 23.5%, or the average yield increased from 21.4 t/ha to 22.7 t/ha.

China (41.8%), the USA (15.4%), Mexico and Egypt (5.5%) are the leading countries in strawberry cultivation.

№	States	Productivity, mln.t
1	China	3,8
2	USA	1,4
3.	Mexico	0,5
4	Egypt	0,5
5	Turkey	0,4
6	Spain	0,4
7	The rest of the countries	2,1

FAOSTAT information

Cultivated strawberries were cultivated in Uzbekistan from the end of the 19th century to the beginning of the 20th century. Since 1932, N.N. Balashov has been carrying out scientific research on the biology, selection and agrotechnics of the strawberry plant at the Agricultural Experimental Station of Uzbekistan.

During the years 1947-1976, on the basis of the expanded plan, scientific research works were carried out on the selection and agrotechnics of strawberry varieties under the leadership of S.I. Yagudina.

In Tashkent, Namangan, Andijan, Fergana and Samarkand regions of the republic, the areas of large-scale planting of strawberries are expanding. Strawberry grows well even in the Republic of Karakalpakstan and gives a high yield.

According to the information of the State Statistics Committee of the Republic of Uzbekistan in 2020, the total area planted with strawberries was 1040 hectares, of which the yielding area is 967 hectares. Productivity is 5318.5 tons, the average per hectare is 52 s/ha.

Currently, the State Register of agricultural crops recommended for planting in the territory of the Republic of Uzbekistan includes Uzbekistanskaya, Kulver, Tashkentskaya, Muto (Krimskaya), Zenga-Zengana varieties of strawberries. In 2018, Bountiful, Redgauntlet, Cobra varieties were included in the State Register.

Years	Total area		Productivity	
	Planted area, hectares	Production area, ha	Total productivity, tons	Average hectare to s/ha
2012	500	460	1610,00	35
2013	550	500	1800,0	36
2014	600	550	2090,0	38
2015	620	600	2400,0	40
2016	680	620	2604,0	42
2017	750	680	3060,0	45
2018	840	750	3750,0	50
2019	967	809	4368,0	52
2020	1040	967	5318,5	55

One of the main conditions affecting the growth, development and productivity of strawberries is the correct selection and placement of varieties in plantations.

Choosing a good variety when establishing a new strawberry orchard is one of the main conditions for obtaining a high yield. It is important that the new variety is productive, resistant to cold, free from diseases and pests, its fruit is large, beautiful, tasty, suitable for consumption and processing when freshly picked, its ripening period is clear, as well as the content of vitamins and other biological substances. It is also appreciated for its preservation.

According to the results of the inspection and selection of varieties, the following varieties are recommended: fairy tale and medium fairy tale - Miss Uzbekistan, Pamyat Shredera, Uzbekistanskaya, medium evening - Bountiful, Redgauntlet, Cobra, Zenga-Zengana, etc. Below is a classification of common varieties.

Uzbekistanskaya-Uzbekistan variety. The bush is large, spreading, with many leaves. The leaves are green, round-oblong, not swollen, self-pollinating variety. The flowers are bisexual, 95% of them have finished fruiting. The flower is multi-flowered. The first fruit is very large (up to 50 grams), wide oval, the later ones are conical, ribbed. The fruit is red, sour-sweet, aromatic and delicious, the flesh is medium dense. It contains 1.5-8.0% sugar, 0.3-0.805% acids, 55-87 mg % vitamin "C". The average weight of the fruit is 8-10 g. High-yielding variety (80-160 kg per 100 m² of land). The fruits ripen in the first ten days of May. Transportable. The fruit picking period lasts 25-30 days. Dessert variety, suitable for processing. It is mainly distributed in Uzbekistan and the south of Kazakhstan.

The main condition for growing strawberries in the conditions of the republic is to supply the crop with water. Frequent rainfall cannot satisfy the plant's demand for moisture during the growing season. Strawberries are irrigated 13-24 times during the growing season, with each irrigation consuming 300-800 m³/ha of water per hectare. In the gravelly lands of the Fergana Valley and Bukhara, Kashkadarya and Surkhandarya regions, irrigation should be carried out frequently, but in small quantities, and in the heavy soil lands of the Tashkent region, less often, but until the crop is full. Watering time depends on air temperature and soil moisture. The first watering is in April, when the fruit begins to ripen, but when spring comes early and dry, it is watered once in March, 3-4 times in May, 2-3 times in June, 3 times in July, 2 times in August. During the ripening period, the furrow is irrigated.

In September and early October, the soil with the plant should be moistened at least twice a week.

Clean water should be used to moisten the soil. As a means for irrigation, you can use various devices. Its main disadvantage is the need to spend additional time and effort on watering. Alternatively, a hose can be used, but then gardeners face the problem of wasting water. It is forbidden to water strawberries with ice water from a well or a well in autumn, the risk of death of the plant is high.

Drip irrigation. This method allows water to be delivered directly to the strawberry roots, which allows the tool to be used throughout the growing season.

Advantages of drip irrigation: low water consumption; the ability to independently determine the dose of water for irrigation; save physical effort and time.

Often, gardeners organize a drip irrigation system, in their plots there is not a single garden bed, but an entire strawberry plantation.

The sprinkler method can be used to care for autumn strawberries. It consists of a mobile or stationary device - equipment on the site of a sprinkler for irrigation. Sprinklers are available in round, rotary, oscillating or fan types. The amount of irrigated area depends on the selected device. In expensive models, timers and sensors are installed for ease of use.

Conclusion. The strawberry plant is the first among berries consumed by the population. It is highly valued for its rapid onset of harvest, early harvest, productivity, growth in any terrain, unique fruit taste, pleasant smell, attractive appearance, nutritional value and nutritional value. Strawberry has a number of biological properties, it has the characteristic of good growth and development. The necessary complex biologically active substances contained in its fruit help to prolong the life of the human body by maintaining its ability to work at a high level.

Currently, our government has adopted several decisions and orders on the development of horticulture and viticulture in the republic for the period of 2012-2026. This makes it possible to expand fruit, berry and grape fields.

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