



Increasing the Efficiency of Growing Garden Products Based on Innovative Technologies

**Kasimova Nodira
Boxodirovna**

PhD student of the International Center For Strategic Development And Research In The Field Of Food And Agriculture

ABSTRACT

This article highlights the benefits of using innovative technologies in the cultivation of fruits and vegetables. The author also gives recommendations on the organization of intensive gardens in the conditions of our country.

Keywords:

agriculture, gardening, growing seedlings, export, innovative technologies

Uzbekistan has great potential for horticulture development and export potential. Taking into account the need to increase the welfare of the population, to saturate the domestic market with cheap and high-quality fruits and vegetables, and to organize high-income intensive production, consistent reforms in this field have been carried out in our country in recent years. In this regard, a number of decrees and decisions adopted by President Shavkat Mirziyoev improve the management system in the horticulture network and greenhouse farms, introduce effective mechanisms of state support, establish cooperation in agriculture, develop high-quality, competitive and exportable products based on modern resource-saving technologies.

In particular, the decision of the President of the Republic of Uzbekistan No. PD-4246 "On measures for the further development of horticulture and greenhouses in the Republic of Uzbekistan" adopted on March 21, 2019 stipulates the development and implementation of targeted comprehensive programs aimed at ensuring the sustainable development of horticulture and greenhouses.

PD-4549 of the President of the Republic of Uzbekistan dated December 11, 2019 "On additional measures to further develop the fruit and vegetable and viticulture industry, creation of added value chain in the sector" and November 23, 2021 "Development of family entrepreneurship in fruit and vegetable and viticulture, The tasks specified in the decisions of PD-20 "On measures to increase the share of peasant farms in agricultural production" serve the purposes of effective organization of the activities of fruit and vegetable and viticulture clusters.

Also, in the decision PD-52 of the President of the Republic of Uzbekistan dated December 15, 2021 "On measures to support the fruit and vegetable industry by the state, to further develop the cluster and cooperation system in the network", growers, processors, keepers and measures to provide exporters with working capital on preferential terms, to insure the risk of crop failure, to attract qualified experts from abroad to fruit and vegetable clusters (cooperatives) have been determined.

In order to ensure the implementation of the tasks specified in the "Digital Uzbekistan-2030" strategy, approved

by the Decree of the President of the Republic of Uzbekistan No. PD-6079 dated October 5, 2020, on December 16, 2022, the Cabinet of Ministers of the Republic of Uzbekistan adopted the "Measures to introduce the information system for providing subsidies to producers of agricultural products" on decision No. 711 was adopted. In accordance with this document, the Ministry of Agriculture and Water Resources, the Agency for the Development of Horticulture and Greenhouse Farms under the Ministry of Agriculture, and the Council of Farmers, Peasants and Land Owners of Uzbekistan through the "Agrosubsidy" information system, complete the processes of allocating subsidies to producers of agricultural products based on the principles of impartiality and transparency.

The basic calculation amount of the subsidy is determined in the following amounts for each piece of purchased seedlings and cuttings:

- for intensive fruit and grape seedlings - 8,000 soums;
- for welding - 2,500 soums.

To cover part of the costs of purchasing seedlings and cuttings for members of agricultural associations, participants of fruit and vegetable clusters and other business entities, the amount of subsidy for each seedling is determined by multiplying the coefficient determined for the type of fruit seedling by its base calculation amount as follows (Table 1):

Table 1
The amount of the subsidy given to business entities to cover part of the costs of purchasing seedlings and cuttings is the amount of its base calculation

Naming	Coefficients by seedling types			
	vine seedlings	seeded fruits	grain fruits	nuts fruits
Intensive seedlings (fine and semi-fine) and bottom welds	0,15	0,50	0,75	1,0

Also, in the decision PQ-52 of the President of the Republic of Uzbekistan dated December 15, 2021 "On measures to support the fruit and vegetable industry by the state, to further develop the cluster and cooperation system in the network", growers, processors, storers and measures to provide exporters with working capital on preferential terms, to insure the risk of crop failure, to attract qualified experts from abroad to fruit and vegetable clusters (cooperatives) have been determined.

Today, it is no secret that the continuous implementation of innovations that ensure quality growth has become a driving force for the development of society and economy. At a time when the world market situation is changing sharply and competition is intensifying, the development of a completely new approach and principles for the development of the agrarian network of our republic at a more stable and rapid pace is becoming an increasingly urgent task. This is closely related to measures to save material and technical and water resources, improve soil fertility, and use alternative heat sources in the development of agriculture, including horticulture. Especially in recent years, the decrease in the possibility of irrigation in our republic requires the rational use of water, the widespread introduction of water-saving technologies into practice. Therefore, installing drip irrigation systems in horticulture is of great importance.

Drip irrigation system is a pressurized irrigation network designed to deliver the amount of water equal to the plant's water needs in the required period to its root layer. This innovative technology leads to efficient use of water, providing plants with dosed amounts of macro and micronutrients, and cost savings in weed and disease control activities. Also, this method serves to prevent soil erosion in gardens established on hills and uneven terrain.

Another measure of innovative development of the horticultural network is the establishment of intensive gardens. So what are the advantages of the intensive method?

First of all, the trunks of the trees maintained in intensive gardens are small, which makes them easier to handle and harvest. In addition, high-quality fruits are ensured due to normal light and air circulation. If agrotechnical activities are carried out on time and in moderation in intensive gardens, small and semi-small gardens will bear fruit in two to three years, and by the fifth year it is possible to harvest up to 40-50 tons. This means two to three times more results than conventional gardens.

Today, our republic has 70 thousand 880 hectares of intensive gardens, of which 32 thousand 468 hectares have a drip irrigation system. The harvested area is 33 thousand 550 hectares, in the future, as a result of the fruiting

of the garden on the area of 37 thousand 330 hectares, the gross yield is expected to be around one million tons (Table 2).

As can be seen from the table, the regions of Samarkand (14,687 hectares) and Tashkent (13,612 hectares) are the leaders in the area of intensive gardens. The least intensive garden area was established in the Republic of Karakalpakstan (1084 hectares), Syrdarya (1771 hectares), and Navoi (2044 hectares). On average, 25-45 tons per hectare are harvested from these gardens, and the average yield in our republic is 141 quintals per hectare. Fergana (233 centners per hectare), Andijan (217 centners), Syrdaryo (210 centners) regions have the highest productivity.

Table 2.

Information about intensive parks established in our republic (2022)

Areas	Total area, He	TST introduced area, he	Harvested area, he	Productivity, ts/he	Gross productivity, t
According to the Republic	70880	32468	33550	141	473055
Republic of Karakalpakstan	1084	30	552	129	71208
Andijan region	3923		2640	217	57288
Bukhara region	4035	704	1769	172	30427
Jizzakh region	6998	4102	941	182	17126
Kashkadarya region	5334	3012	1150	127	14605
Navoiy region	2044	1125	970	113	10961
Namangan region	3440	2467	1974	137	26673
Samarkand region	14687	13281	8700	154	133980
Surhandarya region	5440	2325	3536	108	38188
Sirdaryo region	1771	356	304	210	63840
Toshkent region	13612	4963	6170	66	40722
Fergana region	3402		2807	233	65403
Xorazm region	5109	103	2036	122	24839

Focusing on the following aspects during the establishment of an intensive garden ensures abundant and high-quality harvest:

- correct selection of the combination of grafts and varieties based on the soil-climatic conditions of the region;

- knowing how to correctly choose crop types and varieties based on market requirements;

- to be able to choose the right land for creating a garden (water for irrigation, soil conditions, productivity, the level of provision of specialists and labor force);

- correct choice of pollinator (even if the variety is self-pollinating) and cross-pollinating varieties, use of insects for pollination.

Also, another innovative method that ensures the efficiency of growing horticultural products is the intensive cultivation of seedlings using the "In Vitro" method. So what are the advantages of this method?

It is known that any healthy and vigorous organism has a long life span. Seedlings propagated by microclonal method "In Vitro" are healthy, suitable for soil and climatic conditions, resistant to diseases and pests, quick harvest and give quality fruits. Today, in vitro laboratories have been established in different regions of our republic, and virus-free seeds grown in them, exportable fruit and ornamental tree seedlings are supplied to agro-industry sectors and the population.

In particular, 90 million seedlings are being grown in the in vitro laboratory of Uzbekistan-Turkey partnership "Bukhara-Varnet" LLC, which occupies almost three hectares of land and created the necessary microclimate with the help of special systems. Last year alone, the enterprise exported products worth nearly two million US dollars.

In the "In Vitro" laboratory, established in the "Bog'bon" agro-complex in Jomboy district of Samarkand region, in addition to growing seedlings of healthy, drought-resistant varieties of fruit trees such as walnuts, almonds, peaches, apricots, quinces and dates, suitable for local climatic conditions, 65 different fruits that are not found in the Republic of Uzbekistan tree saplings are being brought and cared for. This project, with a total cost of 2.5 million US dollars, created the basis for the creation of 80 new jobs.

The annual production capacity of the laboratory allows to grow 15 million to 20 million grafted seedlings. At the moment, orders are coming from neighboring Turkmenistan, Afghanistan, Kyrgyz Republic. It is planned to export seedlings grown in the laboratory this year.

In short, the use of innovative technologies in the cultivation of horticultural products helps to increase production efficiency, rational use of land and water resources, and to ensure food security of the country.

References:

1. Decision PD-4549 of the President of the Republic of Uzbekistan "On additional measures to further develop the fruit-vegetable and viticulture industry and create a value-added chain in the sector". 01.11.2019
2. Decision PD-20 of the President of the Republic of Uzbekistan "On measures to develop family entrepreneurship in fruit and vegetable growing and viticulture, increase the share of peasant farms in agricultural production". 23.11.2021
3. Decision PD-413 of the President of the Republic of Uzbekistan "On additional measures to increase the efficiency of greenhouse farms". 02.11.2022
4. Sh. Muradov. Organizational and economic foundations of the development of cooperative relations in the system of selling fruit and vegetable products. dis. author i.f.f.d. (PhD) – T.: 2020
5. Z.S. Shokhjaeva, H. N. Mirjamilova. Innovative processes in the water sector and factors influencing their development. Asian Journal of Research in Business Economics and Management. No. 5, 2022. pp. 18-27.
6. NS Khushmatov, Z.S. Shokhojaeva. EVALUATION OF THE RELATIONSHIP OF WATER RESOURCES WITH THE SUSTAINABLE DEVELOPMENT OF THE AGRICULTURAL NETWORK. Journal Oriental renaissance: Innovative,

educational, natural and social sciences.
No. 3, 2020. str. 1121-1129.

7. Z.S. Shokhojaeva. Ekonomicheskaya Effektivnost Ispolzovaniya Innovativex Irrigatsionnyx Technological. Journal of Economics and Society. #6-2 (73). Str. 638-642
8. Z.Shokhojaeva. Financial support of the state in the use of water-saving technologies and analysis of the achieved results. J: Economy and innovative technologies. #6, 2022. Str. 138-146.