

## The role of increasing the economic efficiency of potato production in food supply of the population of Uzbekistan

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**Annotation.** Potato is one of the most popular agricultural crops in Uzbekistan. At the same time, there is a certain demand for it in neighboring countries. Therefore, the government has decided to take a number of measures to support the manufacturers of this product. Food imports will increase the level of food supply in the domestic market, lower prices and create a competitive environment for local producers, forcing them to increase efficiency as a result.

**Keywords:** potato cultivation, liberalization, specialization, import, export, yield, food, seed growing, Uzbekistan.

**Introduction.** Potato is an annual plant that has concern special place in food security. There are specific agro-technical methods of this plant, which are not only the result of scientific research but also the experience of farmers in this field to obtain high yields in different regions. Potatoes contain about 62-82% water and 23-34% dry matter. In addition, potatoes contain 23.7% carbohydrates, 2.0% protein, 0.9% sugar, 0.7% amino acids, 14-22% starch and 0.18% fat. Potato is an important food and nutritious technical plant and occupies one of the most important places among vegetables. The reason why potato tubers are widely used in the food industry is due to their high content of carbohydrates, proteins, starch, vitamin C, mineral salts, iron, calcium, and other substances that are well absorbed by the human body. For example, the amount of drug C in it is around 12-40 mg, reaching RR (0.57 mg), V1 (0.11 mg), V2 (0.06 mg) and V6 (0.22 mg). The young stalks of potatoes contain about 84% water. Vitamin C is especially abundant in immature young shoots. Potatoes are very important in the food industry and therefore it ranks second after cereals. From 1 ton of potatoes, 112 liters of alcohol, 55 kg of carbon dioxide, 0.39 liters of vegetable oil, 1500 liters of bar or 170 kg of

starch, 80 kg of glucose, and other products are obtained. Due to the quality of potato alcohol, it is widely used in the pharmaceutical, perfume, and vodka industries. The starch obtained from it is used in the manufacture of confectionery, textiles, and sausages. About 25-30% of the potatoes grown are used as seeds. The experience of many countries shows that the main condition and factor of food security in poverty reduction is economic growth based on equity. It improves living standards and food intake. Liberalization and increase in international trade will improve the diversity and economic supply of food. Free international trade in food eliminates imbalances in agriculture and helps optimize production. Food imports will increase the level of food supply in the domestic market, lower prices, and create a competitive environment for local producers, forcing them to increase efficiency as a result. Food exports allow local producers to compete in foreign markets, while at the same time reducing costs and operating more efficiently.

International trade promotes 59% economic growth and serves to improve living standards, which in turn improves the provision of food products, economic popularity, and consumption of food products.

**Literature review.**In recent years, the world agricultural practice has taken into account the biological properties of crops in agriculture, the widespread introduction of resource-saving technologies that improve and protect soil ecology through the use of agrotechnologies suitable for soil and climatic conditions. saving of fertilizers, planting and cultivating potatoes as a secondary crop in the areas freed from winter grain, and then reducing the cost of production in the cultivation of cotton.

L.Ilchuk [1983] studied the effect of sowing time, depth, and some bushes per hectare on the yield of potatoes and the increase in starch content in the tuber and reported the following. In other words, if 80,000 seeds were sown per hectare at a depth of 10-12 cm between April 1 and 30, the starch content of potatoes in the Verkhovina variety increased by 2.3% compared to April 20, and in the Yubel variety by 1.9%. There is a lot of information about the effect of mineral fertilizers

on potato yield. But their effectiveness depends on the crop navigation, the type of soil in which the experiments were carried out, other agro-technical measures used to grow potatoes, the type of fertilizer, and other factors. For example, while the average yield was 21.7 t per 200 kg of nitrogen, 200 kg of phosphorus, and 100 kg of potassium per hectare, in the control variant this figure was 17.6 t [Ostanakulov T.E., 1991], ie the effect of mineral fertilizers provided an average yield of 4.1 t per hectare. In other experiments, the average yield was 209 ts from the area of potatoes grown without Priekulsky early variety without fertilizers, while in the given variant of mineral fertilizers N200P160K75 this figure was 227 ts [Abdukarimov D.T., etc., 1984].

**Research methodology.**In the introduction of short-cropping systems on irrigated lands, the main focus should be on planting potatoes, legumes, cereals, and vegetables, which maintain and increase soil fertility and meet the needs of the population in daily food products. Improving land-use efficiency is one of the current issues

Potato is one of the most popular crops in Uzbekistan. At the same time, there is a certain demand for it in neighboring countries. Therefore, the government has decided to take several measures to support the manufacturers of this product.

Special biotechnology laboratories have been set up at the Institute of Bioorganic Chemistry and the Scientific Research Institute of Vegetable and Melon Crops and Potatoes to study and produce elite-grade potato seeds.

In recent years, special attention has been paid to increasing the competitiveness and modernization of agricultural products. In particular, increasing the competitiveness of our economy and modernization of production are identified as one of the main priorities of economic reforms.

Resolution of the President of the Republic of Uzbekistan No. PP-4704 of May 6, 2020 "On measures to expand potato cultivation and further development of seed production in the country" -strengthening was also adopted to fully meet

the domestic market demand for potatoes. Based on this decision, the main activities of potato clusters and cooperatives were identified:

- cultivation of consumer and seed potatoes in integrated areas based on innovative and resource-saving technologies and the creation of a value chain in the field;
- expansion of cultivation of super-elite and elite generations of seed potatoes, seed production, and establishment of modern potato plantations;
- meeting the domestic market demand for consumption and seed potatoes, as well as expanding its exports;
- to establish the cultivation of super-elite and (or) elite generations of seed potatoes in at least 50% of the crop area intended for potato planting;
- organization of storage, sorting, delivery, and processing of seed potatoes;
- introduction of advanced technologies, innovative solutions (know-how), and scientific achievements in the field of potato growing.

In addition, the list of districts specializing in potato growing is shown in Annex 1, according to which Asaka, Andijan, Jalal-Abad, Khojaabad and Kurgantepa districts of Andijan region specialize in growing potatoes for consumption, and Asaka, Jalal-Abad, Kurgantepa districts specialize in growing seed potatoes.

Taking into account the soil and climatic conditions of the regions, the mahallas "Khanabad", "Qorasuv", "Savay" and "Dardoq" of Kurgantepa district of Andijan region were selected for the areas specializing in the cultivation of super-elite generation of seed potatoes.

**Analysis and results.** In Uzbekistan, many systemic arrangements are being developed to meet the food needs of the population in the context of a pandemic.

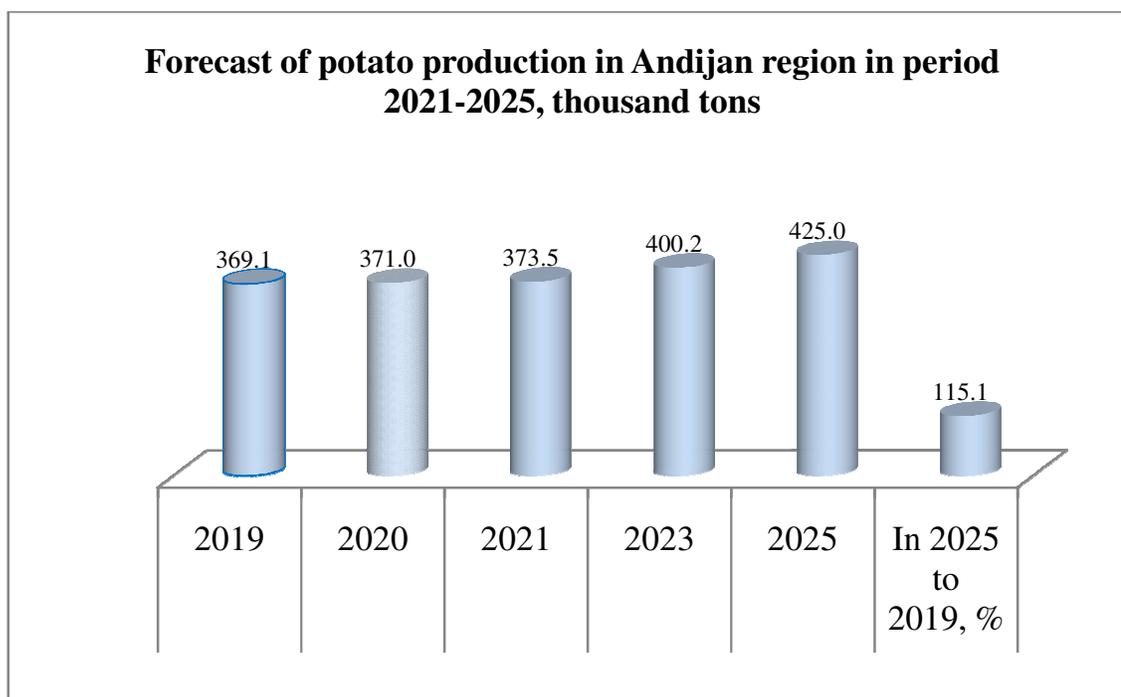
Due to the climatic conditions of our region, the cultivation of potatoes in Uzbekistan is very complicated. For example, in hot and dry weather, we need to carry out important agro-technical measures for the growth of potato roots in a flat, uniform volume. The traditional method is to irrigate the furrows, in which water is poured from a high point into the lower part of the field through ditches.

However, in this method, the human factor is very important. To get a good harvest, it is necessary to keep the soil at a certain humidity and temperature, distributing water evenly over the plots. If this is not done, the growth of the potato will deteriorate and rot as a result of the lack of water somewhere in the crop area, and vice versa.

Therefore, the introduction of automated irrigation in our country has begun. Today, Agrover LLC has purchased expensive technology from Israel that allows sprinkler (remote) circulating irrigation of nearly 600 hectares of land. The holding also uses Frigate sprinklers in the fields. Gradually all fields are planned to be updated with this modern system.

An important factor in the development of agriculture is the proper organization of crop rotation. For this reason, a unique method has been developed, such as crop rotation, in which selected potato seeds are sown alternately in the same area. One plot is planted with potatoes, wheat, corn, and various legumes. This helps maintain soil fertility and efficiency.

When we analyze the data (tons) of potato products produced in all categories of the Republic of Uzbekistan over the past decade, the highest indicator of potato production is 2018. In 2019, potato production is at its lowest level in a decade due to climate change.



As a result of the study of the above analysis, a plan for potato cultivation in Andijan region in 2021-2025 was developed.

According to this, taking into account the needs of the population in food products, including potatoes, it is planned to grow 425,000 tons of products, which in 2025 is expected to be 15.1% higher than in 2019.

**Conclusions and suggestions.** In improving the food supply of the population, special attention should be paid to the use of the following opportunities to increase the economic efficiency of high and quality yields and the production of cheap potatoes:

- Creation of a territorial system of potato production that meets the natural and economic conditions of the existing regions of the country and is scientifically based;
- Expanding the area under potatoes and increasing the yield by at least 150 quintals per hectare, taking into account the biological characteristics of potatoes and the demand of the population for it;
- Large-scale development of potato growing on farms to reduce the cost of potato production, increase efficiency and bring the volume to the level of regulatory requirements;

- formation and expansion of the wholesale market of potato seeds by the state;
- increase and improvement of service points for potato farms;
- accelerate the introduction of advanced and cost-effective technologies and mini-techniques in potato growing.

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