

HISTORY AND PROSPECTS OF DEVELOPMENT OF POTATO GROWING IN UZBEKISTAN

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Abstract

Potato is one of the most popular agricultural crops in Uzbekistan. At the same time, there is a certain demand for it in the neighbouring countries. Therefore, the government decided to implement a series of measures to support the producers of this product. The import of food products allows to increase the level of food supply, reduce prices and create a competitive environment for local producers in the domestic market, thereby forcing them to increase productivity.

Key words: potato cultivation, liberalization, specialization, import, export, productivity, food, seeds.

Introduction. In the Republic of Uzbekistan, the components of the agro-industrial complex, agriculture and the food industry engaged in the processing of products grown in it, are some of the important sectors of the economy of Uzbekistan.

Agriculture supplies necessary raw materials of the food products and processing industry for the domestic and foreign consumer market of the Republic, mineral fertilizers, defalants and pest control tools for plants grown in agriculture and is a guaranteed market for a number of sectors such as agricultural machinery, storage of products.

As noted in the Resolution No 251 of the Cabinet of Ministers of the Republic of Uzbekistan dated August 29, 2015 "Concept of ensuring healthy nutrition of the population of the Republic of Uzbekistan for 2015-2020", producing food products in our country, especially products enriched with essential micronutrients, creating conditions meeting the needs of the population for healthy eating through incentives, producing food products based on domestic raw materials, shaping the environment which promotes the principles of healthy eating among the population and fundamental research work in the field of healthy eating and nutrition focused on learning diet and causes of eating disorders among different groups of the population are noted.

Literature analysis. The germination technology before planting seedling potatoes has its own characteristics according to the conditions of each zone and region, as well as the varieties that are planted. In general, regardless of the fact that the germination of the seeds at a light and high temperature is almost the same, it can last from several days to several weeks – it must necessarily be before planting.

There is other information about the duration of the germination of the seeds. Included Y.A. Yatareva [1976] - 40-50 days, P. Sozze [1985] - recommended to germinate seed 6-8 weeks before planting. From the researchers A.K. Chaika, B.I. Umanets [1985] recommended to germinate seed for short term 10-12 days at light; N.N. Balashev [1971], M.M. Mukhamedov [1976], G. Petrenko [1968], R.N. Abramova, I.G. Busarova [1985] recommended for 15-20 days.

In the conditions of Tashkent region, it is recommended to germinate potato seeds, which are planted early, in bright and warm (10-15°C) rooms for 20-25 days.

Through planting early ripening variety Latona of potato seedlings at different times for 5,10,15 and 20 days in the conditions of the experimental station of Tashkent State Agrarian University, B. Niyazov [2008] obtained the following

results: germinated seedlings for the period of 5-10 days and 15-20 days will be harvested in 1-2 days and 7-8 days respectively earlier compared to not germinated ones. This in turn affects productivity and the difference between the options was as follows: control variant productivity was 21.3 tons per hectare in 5-10 days, in germinated option it was 23.8 tons per hectare in 20 days and productivity of fertilized seed was 6.2 tons per hectare higher than control option. B. Niyazov [2008] recommended that potatoes be germinated for 20 days in the early term of Latona-type varieties.

Research methodology. Potato is one of the most important social products. In the past, only imported potatoes predominated in Uzbekistan, and all domestic production depended on the crop grown on farmlands. This crop is very difficult to grow in our climate and requires frequent and regular watering of potatoes. That's why farmers initially preferred cotton, wheat and legumes.

Potato production has grown rapidly in recent years. May 6, 2020, Resolution No. PR-4704 of the President of the Republic of Uzbekistan "On measures to expand potato production and further development of seed production in the country" was adopted in order to increase production consumer and seed potatoes in the country, expansion of cluster and cooperation mechanisms in the potato sector, supporting the introduction of modern technologies by the government and full satisfaction of domestic market demand for potatoes. This decision served to further improve the measures taken in this direction.

During the first 30 years after the introduction of potatoes to Uzbekistan, the area under potatoes increased very slowly, reaching only 250 hectares at the end of the 19th century. The yield was 5-6 tonnes per hectare. In the last decade of the 19th century, cropland began to grow rapidly and by the end of the 19th century, the area under potatoes had grown to more than a thousand hectares. The area under potatoes grew rapidly before the First World War. The average yield during this period was 5-7 tonnes per hectares. During the years of the First World War and especially the Civil War, the area under potatoes was sharply reduced.

By the end of the 1920s, potato growing had developed very slowly, and during the period of agricultural collectivization, it began to grow rapidly. In 1913 it was planted on 6.5 thousand hectares and produced 46.2 thousand tons. Before the outbreak of World War II, the area under this crop in Uzbekistan was 18.3 thousand hectares, and the gross harvest was 113.3 thousand tons. During the war years, the area under

potatoes and the gross harvest fell sharply, reaching pre-war levels only in the late 1950s.

Since the 1960s, potato planting area, productivity and gross yield has been growing steadily in Uzbekistan. During this period, half of the potato growing area was embodied in the collective farm sector, and the rest was located on state farms and private farms. It was grown on 200-300 hectares of land in the farm specializing in potato growing and on non-specialized farms as well. During this period, locally produced potatoes accounted for 15-17 kg per capita, and the demand for this product was met by potatoes imported from Russia, Belarus and the Baltic States. Uzbekistan annually receives 300-350 thousand tons to consume and 100-120 thousand tons seed potatoes.

Extensive research on potatoes in Uzbekistan began in the early 30s of last century. Research works Central Asian Experimental Station of the All-Union Institute of Botany (now the Institute of Botany of Uzbekistan), Vegetable Experimental Station of the Republic of Uzbekistan, established in 1933, reorganized in 1946 has been launched at the Republican Experimental Station of Vegetables and Potatoes and at the Research Institute of Vegetables and Potatoes of Uzbekistan since 1961. Since after the Second World War, scientific research on potatoes was carried out by the Tashkent and Samarkand Agricultural Institutes, and since the 1970s by the scientific organizations of the Academy of Sciences of Uzbekistan.

Until the 1980s, elite and primary seed production did not exist in the Republic. Potato growing was based on imported seeds. After the independence of Uzbekistan, a new era in the history of potato growing began. The demand of the population for potatoes and the problem of food security have raised the issue of increasing potato production in the country. During the first three years, expansion, productivity and gross yields works of potato planting areas is underway. Potato production amounted to 351.2 thousand tons in 1991, and 567.1 thousand tons in 1994. This limited the import of imported potatoes.

In 1995, no seed potatoes were imported, which in turn caused to shorten the planting areas to a certain extent and reduce the productivity. As a result, the gross yield decreased to 439.9 thousand tons. Despite a reduction of planting areas, through the planting imported virus-free seed potatoes, productivity increased and the gross yield reached to 513.6 thousand tons.

In order to ensure the growing seed stock of potatoes and to fill the domestic market with domestically grown potatoes in the republic, The Cabinet of Ministers of the Republic of Uzbekistan adopted Resolution No. 301 of August 30, 1996 about "Measures for deepening of market relations and increase of potato growing in potato growing of the republic". According to the resolution, the Uzkartoshka company which unites 26 potato farms was established. The company is tasked to address the following issues:

In order to create a seed base in the country and renew the variety, ensuring the needs of the republic's farms in seed potatoes by importing seed potatoes from outside the country. Bringing 25 thousand tons of seedlings in order to renew varieties annually, harvesting 126 thousand tons of production and 84 thousand tons of seedlings by growing potato on the area of 7 thousand hectares, noted in the resolution. The company's activities have helped to

increase potato production in the country. Since 1997, potato production has been steadily increasing.

The area under potatoes has hardly expanded. From 1997 to 1998, it was 56.7-54.2 thousand hectares and was stable at 49-50 thousand hectares. Our potatoes produced in the republic come 31-32 kg per consumer, and there was no need to import potatoes for consumption. Organizing on the basis of local seed production and imported virus-cured seeds reduced the import of seed potatoes, and only elite and Class A varieties are being imported in limited quantities.

The increase in potato production is not due to the expansion of planted areas, but due to increased productivity. If the yield of potatoes was 8.5 tons per hectare before the independence of our country, in the last three years its average yield has steadily increased and reached to more than 15-16 tons per hectare and in seed farms it is 20-25 tons per hectare. The average yield in the country in 2003 was 17.0 t / ha, and in the main potato-growing regions 18-19 t / ha. This was achieved primarily through the renewal of varieties, the use of high-quality seeds and high-yielding varieties obtained through summer sowing, as well as the diligent work of farmers and landowners. Potato production is not evenly distributed across the country.

Potatoes were produced annually from an average of 750.9 thousand tons in 2000-2002, the bulk of which (563.9 thousand tons or 75.1%) was produced in low-salinity land Samarkand (24.2%), Tashkent (21,8%) and in three regions of the Fergana Valley (29.3%). In irrigated farming and fully saline lands of six regions production was an average of 120.9 thousand tons of or 16.1% potatoes per year, in Karakalpakstan - 1.0%, in Syrdarya - 1.7%, in Jizzakh - 1.8%, in Navoi - 2.2 %, in Khorezm - 3.4% and in Bukhara - 5.8%.

After the independence of Uzbekistan, measures were taken to improve the social status of the rural population. Due to the reduction of the area under cotton, the rural plots of land have been expanded. As a result, the production volume of potatoes grown on plots of land and on farms is growing. Therefore, the number of private and subsidiary farms has risen sharply, and they are dominating potato production.

Potato production was 40-45% on plots of land before the reform and farms in this category increased its production to 85-90% in the last years. It is not possible to use industrial technology and mechanization in the production of potatoes on small plots of land, so it requires a lot of manual labor to grow it, and as a result, the cost of the product is high. The development of potato growing in Uzbekistan is negatively affected by the following: have an outdated material and technical base of the industry, lack of integration of production and lack of specialization of farms; mineral fertilizers, chemicals, fuels and the high cost of equipment and lack of high-yielding varieties.

According to the recommendations of health organizations, a person should consume 45 kg of potatoes a year, but despite the significant increase in potato production, the population's demand for it is not fully met.

At a time when the world consumes an average of 43-44 kg of potatoes per consumer, Uzbekistan lags behind in potato production. This indicates the need to increase potato production in Uzbekistan by 1.4-1.5 million tons.

Analysis and results. In recent years, special attention has been paid to increasing the competitiveness and modernization of agricultural products. In particular,

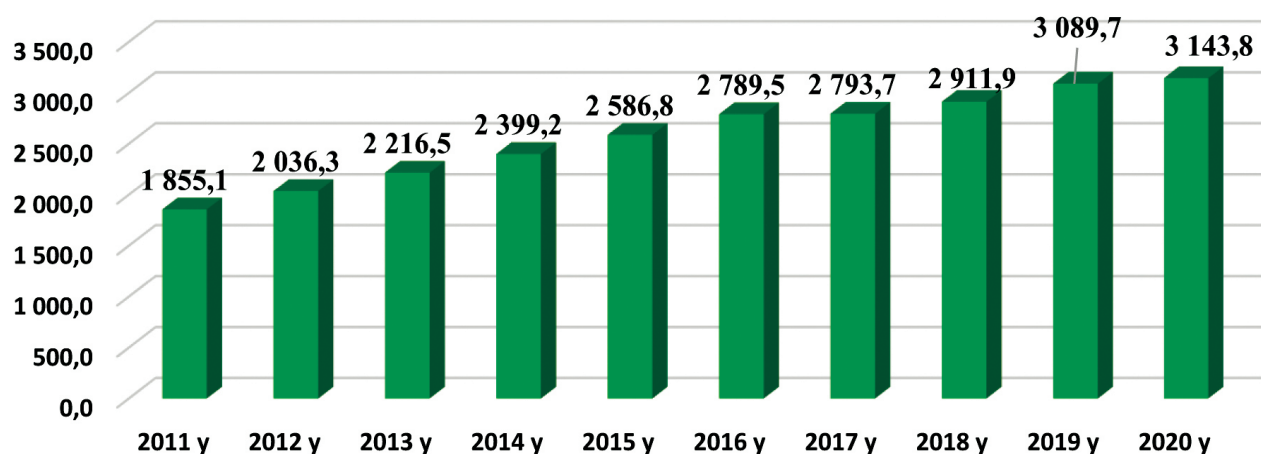


Figure 1. Dynamics of potato growing in the country (2011-2020).

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. PQ-4704 of May 6, 2020 about "Measures to expand potato production and further development of seed production in the country" was adopted in order to increase the volume of cultivation of consumer and seed potatoes, expand the mechanisms of cluster and cooperation in potato growing sector, further support the introduction of modern technologies by the state, as well as to fully meet the domestic market demand for potatoes. Based on this resolution, the main activities of potato clusters and cooperatives were identified:

- Cultivation of consumer and seed potatoes in integrated areas on the basis of innovative and resource-saving technologies and the creation of a value chain in the industry;
- Expanding the cultivation of super elite and elite generations of seed potatoes, seed preparation and the establishment of modern potato plantations;
- Satisfaction of domestic market demand for consumer and seed potatoes, as well as expansion of its exports;
- Establishment of growing super elite and (or) elite generations of seed potatoes in at least 50% of the planting area which is intended for planting potatoes;
- 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, according to the resolution, the list of districts specializing in the cultivation of potatoes is given in Annex 1, according to this, Asaka, Andijan, Jalakuduk, Khojaabad and Kurgantepa districts of Andijan region are specialized in growing consumer potatoes and Asaka, Jalakuduk and Kurgantepa districts are specialized in growing seed potatoes.

Taking into account the soil and climatic conditions of the regions, mahalla citizens' assemblies of "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.

An important factor in the development of agriculture is the proper organization of crop rotation. Therefore, a unique

method of crop rotation has been developed, in which the selected potato seeds are sown alternately in the same area. Potatoes, wheat, corn and various legumes are planted in one plot. This helps maintain soil fertility and efficiency.

As a result of reforms in the potato sector in our country, the volume and quality of production is growing. In particular, in January-December 2020, all categories of farms harvested 3,143.8 thousand tons of potatoes (1.75% more than in January-December 2019). In particular, 105.1 thousand tons of potatoes were grown on farm enterprises, 1374.6 thousand tons on farms and 11.2 thousand tons by other agricultural enterprises and delivered to the people (Figure 1).

Conclusions and suggestions. In order to harvest high and quality crops and increase the economic efficiency of cheap potato production during the study of the development history and prospects of potato growing in Uzbekistan, improvement of the food supply of our people, special attention should be paid to the use of the following opportunities to:

1. In order to develop the economy of the Republic of Uzbekistan in recent years, the rapid growth of trade in agricultural products, the development of export potential will create the basis for great benefits in our economy.

2. Allocation of significant state subsidies to attracts modern technologies in the production of agricultural products causes to reduce the costs and improve the quality of product through the organizing the process of storage and processing of products in cooperation with the joint-stock company "Uzozikovkatzahira" and retail supermarkets.

3. One of the most widely consumed food products in the world is the potato, in Uzbekistan demonstrating in practice that high economic benefits can be obtained through growing new selective varieties, zoning, production of high agro-technical methods, delivery of grown crops to consumers in high quality and storage and processing of crops..

In Uzbekistan, getting a high yield and improving its indicators of quality by taking into account environmental conditions in harvesting potatoes improving its quality will create the basis for improving the economic performance of the industry.

- expansion of the area under potatoes, taking into account the biological properties of potatoes and the demand for them, and increase the productivity by at least 150

quintals per hectare;

- large-scale development of potato growing on farms and farm enterprises in order to reduce the cost, increase the efficiency and bring the volume of potato production to the level of regulatory requirements;
- formation and expansion of the wholesale market of

potato seeds by the state;

- increase and improve the number 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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