



UDC 631

## WAYS TO INCREASE THE ECONOMIC EFFICIENCY OF POTATO GROWING IN THE CONTEXT OF IMPROVING THE FOOD SUPPLY OF THE POPULATION

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**Аннотация.** Kartoshkadan, asosan, xushxo'r va to'yimli oziq-ovqat sifatida foydalaniladi, uni me'yor darajasida iste'mol qilish inson tomonidan iste'mol etiladigan ko'pgina mahsulotlarni yaxshi hazm bo'lishiga ham yordam beradi. Yevropa va Lotin Amerikasi mamlakatlarida dehqonchilik oziq-ovqatlar balansi tarkibida kartoshka don mahsulotlaridan keyin ikkinchi o'rinda turadi. O'zbekistonda ham aholining kartoshkaga bo'lgan talabi va uni qondirish darajasi ko'tarilib bormoqda. Kartoshkani qayta ishlash jarayonida kraxmal va spirt olinadi. Ulardan, asosan, shirinlik va alkogol ichimliklar ishlab chiqarishda foydalaniladi.

**Калит сўз:** озиқ-овқат баланси, картошка етиштириш, уруғлик туганаклари, sprinkler (masofadan turib)aylanma sug'orish, almashlab ekish, kartoshka urugining ulgurji bozori, servis xizmati, ilgor va tejamkor texnologiya

**Аннотация.** Картофель в основном используется в качестве сытной и питательной пищи, его употребление в умеренных количествах также помогает хорошему перевариванию большинство продуктов, потребляемых человеком. В странах Европы и Латинской Америки картофель занимает второе место в продовольственном балансе сельского хозяйства после зерновых продуктов. В Узбекистане растет потребность населения в картофеле и уровень ее удовлетворения. В процессе переработки картофеля получают крахмал и спирт. Они в основном используются для производства сладостей и алкогольных напитков.

**Ключевые слова:** продовольственный баланс, выращивание картофеля, сеялки, спринклерное (дистанционное) ротационное орошение, севооборот, оптовый рынок семян картофеля, сервис, передовые и экономически эффективные технологии

**Annotation.** Potatoes are mainly used as a sweet and nutritious food, and consuming them in moderation also helps to better digest many of the foods consumed by humans. In European and Latin American countries, potatoes ranks second in the agriculture food balance after grain products. In Uzbekistan, the demand of population for potatoes and its satisfaction level is growing. In the process of recycling potatoes, starch and alcohol are obtained. They are mainly used in the manufacture of sweets and alcoholic beverages.

**Keywords:** food balance, potato cultivation, seed drills, sprinkler (remote) rotary irrigation, crop rotation, wholesale potato seed market, service, advanced and cost-effective technology

**Introduction.** Potatoes are mainly used as a sweet and nutritious food, and consuming them in moderation also helps to better digest many of the foods consumed by humans. In European and Latin American countries, potatoes ranks second in the agriculture food balance after grain products. In Uzbekistan, the demand of population for potatoes and its satisfaction level is growing. In the process of recycling potatoes, starch and alcohol are obtained. They are mainly used in the manufacture of sweets and alcoholic beverages.

Intensive development of potato growing in Uzbekistan will create conditions to increase the efficiency of land, water, labor and other resource use.

**Literatures review.** Regardless of the period of cultivation of potatoes, the preparation of seed pods for sowing, the correct choice of sowing time and depth, as well as a clear definition of the norms and timing of feeding are of great practical importance to increase economic efficiency. When potatoes are planted at different times, the seedlings are harvested late and slowly due to lack of soil temperature. This, in turn, will increase the demand for potatoes.

Here are the opinions of scientists and experts who have conducted research in different climatic zones. According to N.S. Boyko [1981], B.A. Pisarev [1986], if the harvested seeds are sown early, the cold days of spring have little effect on the rate of seedling formation. According to Y. Skrinskaya, L. Degtyarova [1980], B.A. Pisarev [1986], E.E. Brown [1985], growing seeds in a bright, warm place before planting can help determine if they are infested with fungal, bacterial, and viral diseases, and prevent these diseases from infecting and spreading early potatoes.

Pre-sowing preparation of seeds is recognized as an incomparably important agro-technical measure that ensures high and early yields, and growing seeds in a bright place is one of the most important measures in the cultivation of early potatoes. B.P. Pisarev [1986] analyzed the results of experiments conducted in Russia on pre-sowing sowing of potato tubers and reported the following. Sowing early potato seeds in the spring will increase yields by 40-60%, while in the northern and northeastern zones it will increase by 2-3 times.

L.Ilchuk [1983] studied the effect of sowing time, depth and number of bushes per hectare on the yield of potatoes and the increase in starch content in the tuber. In other words, if 80,000 seeds were sown at a depth of 10-12 cm per hectare on April 1 and 30, the starch content of potatoes in Verkhovina increased by 2.3% compared to April 20, and in Yubel - by 1.9%. There is a lot of information about the effect of mineral fertilizers on potato yields. However, their effectiveness depends on the sort of crop, the type of soil in which the experiments were performed, other agronomic practices used to grow potatoes, the type of fertilizer, and other factors.

For example, while the average yield was 21.7 tons in areas of given 200 kg of nitrogen, 200 kg of phosphorus and 100 kg of potassium per hectare, in the control option this figure was 17.6 tons [Ostonakulov T.E., 1991], or the efficiency of mineral fertilizers provided an extra yield of average 4.1 tons per hectare. In other experiments,

the average yield of the sort Priyekulsky ranniy was 209 quintal from the area of potatoes grown without fertilizer, while in the option given of mineral fertilizers N200P160K75 this figure was 227 quintal [Abdukarimov D.T., etc., 1984].

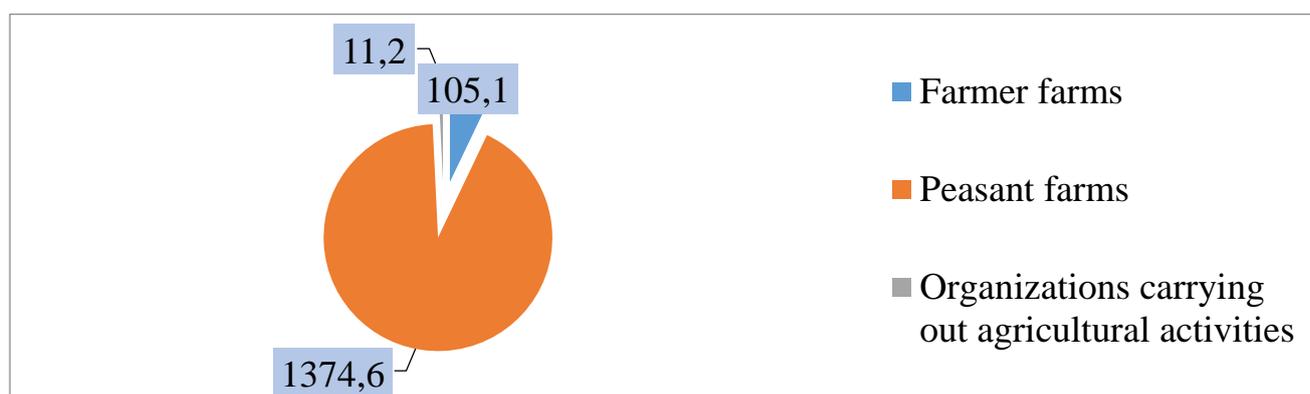
**Research methodology.** Potato is one of the most important social products. In the past, only imported potatoes predominated in Uzbekistan, and all local production depended on farm produce. This crop is very difficult to grow in our climate and requires frequent and regular watering of potatoes.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

In recent years, potato production has grown rapidly. In 2009, one of the leaders in the potato market, "Agrover" LLC agro-holding, was established. The company annually supplies the potato market for consumption with elite seed potatoes and the best potato products. Resolution of the President of the Republic of Uzbekistan dated February 23, 2018 №PP 3558 "On measures to further develop the cultivation of seed potatoes in the country" served to further improve the measures taken in this regard.

**Analysis and results.** In our country, a number of systemic measures are being developed to meet the food needs of the population in the context of a pandemic.

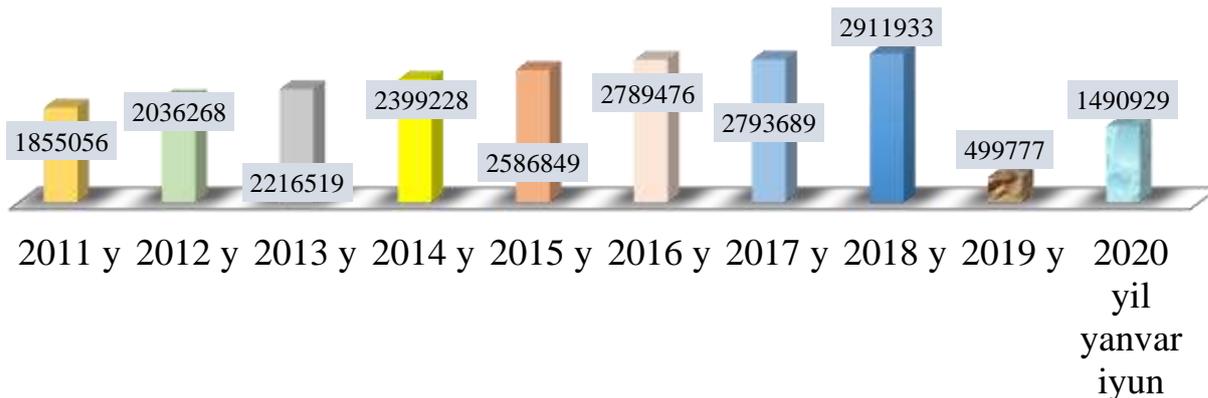
Due to the climatic conditions of our region, the cultivation of potatoes in Uzbekistan is very difficult. For example, in hot and dry weather, we need to take important agro-technical measures to ensure that the potato roots grow evenly and uniformly. The traditional method is to irrigate the furrows, where water is poured from a high point and poured into the lower part of the field through ditches. However, in this method, the human factor is very important. To get a good harvest, you need to distribute water equally over the land and keep the soil at a certain humidity and temperature. If this is not done, the potato will grow poorly and rot as a result of water overcrowding or vice versa.

Therefore, the introduction of automated irrigation method in our country has begun. Nowadays, Agrover LLC, an agroholding, 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. It is planned to gradually update all the fields 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 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 on a plot. This helps maintain soil fertility and efficiency.



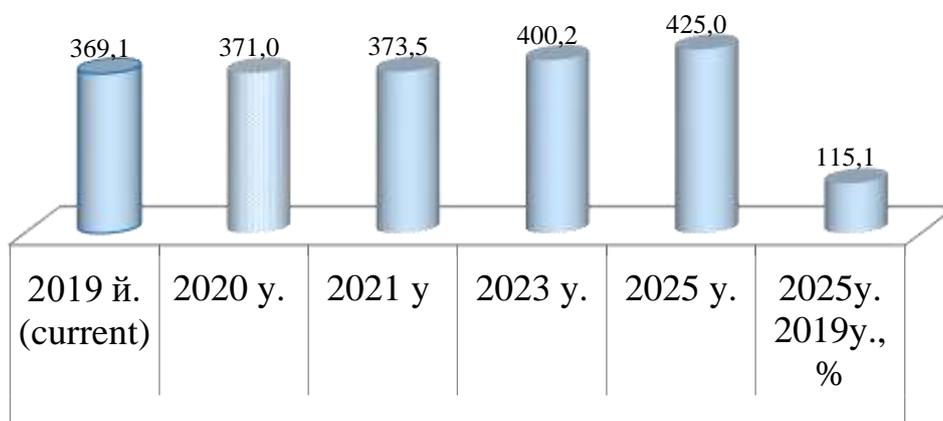
In 2020, the forecasted production of about 2.8 million tons of potatoes on 130,000 hectares in the country was set. In January-June 2020, 1,490.9 thousand tons of potatoes (1.4% more than in January-June 2019) were grown by all categories of farms. In particular, 105.1 thousand tons of potatoes were grown on farms, 1374.6 thousand tons on peasantry farms and 11.2 thousand tons by other agricultural enterprises, were delivered to the people.

### In the production of potato products in the Republic of Uzbekistan (tons)



When we analyze the data (tons) of potato products produced in the Republic of Uzbekistan for the last ten years, the highest potato production is in 2018. In 2019, potato production is at its lowest level in a decade due to climate change. As a result of the above analysis, a plan for potato cultivation in Andijan region for 2021-2025 was developed.

### The plan for potato production in Andijan region in 2021-2025 is one thousand tons



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

**Conclusions and suggestions.** In order to improve the food supply of the population, it is necessary to pay special attention to the use of the following opportunities to obtain high and quality crops and increase the economic efficiency of the production of cheap potatoes:

- Creation of a territorial system of potato production that meets the natural and economic conditions and scientifically based of the existing regions of the country;
- Expansion of the crop areas of potato and increase the yield by at least 150 quintals per hectare by taking into account the biological properties of potatoes and the demand of the population for it;
- Large-scale development of potato growing on farms 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-equipment in potato growing.

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