



TYPES OF PLANTS SKILLFULLY GROWN IN THE LESS FERTILE LANDS OF THE KHIVA KHANATE AND THEIR HISTORY

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ABSTRACT

Nowadays, in the Khorezm oasis of the Republic of Uzbekistan, the cultivation of agricultural products is developing rapidly. Especially during the Khiva khanate, the cultivation of agricultural crops, the reproduction of its species played a key role in the Khorezm region. On the basis of sources, this article describes how local people skillfully cultivated in low-yielding fields and what crops they cultivated during the Khiva khanate.

KEYWORDS: *Wheat, barley, oats, rice, onions, cotton, clover, melon*

INTRODUCTION

In spite of the lack of fertile lands in the territory of Khiva khanate, agriculture developed very well. Many types of crops are grown by farmers. We can study these types of crops in five groups:

- 1) Food crops, such as wheat, corn, barley, rice; legumes, such as moss, beans, as well as onions and carrots; and melons, watermelons, pumpkins;
- 2) Crops used as fodder for livestock: barley, clover, corn;
- 3) Plants grown for oil production: sesame, flax, cotton, hemp,
- 4) Plants grown for spinning: cotton and hemp;
- 5) Plants grown for dyeing, such as *Rubia tinctorum*.

Later, farmers began to grow potatoes, beets and cabbage.

MATERIALS AND METHODS

This article describes the economic analysis and comparative analysis of how farmers in the Khiva khanate cultivated in low-yielding lands and what agricultural crops they grew.

RESULTS

In the khanate, five types of wheat were grown, of which, 3 types were winter varieties, the remaining two types were spring varieties. According to O.O. Shkapsky's sources, more than 130 pounds (1 pound-16 kg, 380 grams) of winter wheat and more

than 100 pounds of spring wheat were harvested from one tenth of the land. [1] Wheat was planted in winter and spring, depending on the navigation. Its winter variety was planted in September, and the spring variety in March. These two varieties of wheat had been cultivated ten times, and in some cases even more. 800 tons of manure was sprayed over per ten desyatina (1 desyatina - 2400 m²) of land and irrigated up to 5 times during tillage. After reaching the quarter length, the seedlings were watered once and up to 3 times until the wheat ripened. Irrigation of winter wheat varieties began after germination in spring. In autumn, the irrigation process was stopped. Harvesting of winter wheat was carried out one or one and a half weeks before the spring harvest.

Of the food crops in the khanate, barley was planted only in March of the spring season. 1,300 tons of manure was needed for fertilization of arable barley lands. After the land was cultivated in July, the land was irrigated several times, just like wheat. Barley seedlings were irrigated once when the length was a quarter arshin (1 arshin - 0.711 m). They were irrigated 5 times before ripening. Barley was harvested at the same time as wheat. Up to 130 pounds were harvested from one tenth of the land. Barley, as mentioned above, was grown both for food and for fodder for livestock.

Another favorite food of Khiva people was corn. [1; 2] The length of corn varies from 3 to 5 arshins (1 arshin - 0.711 m) depending on the navigation. Corn was planted on well-cultivated land



in May. Farmers sowed 1,000 tons of sandy manure on one desyatina of the land planted with corn, plowed and irrigated 5-6 times. Upon completion of this process, 1,000 tons of sandy soil would be spread on each tenth of the land. Irrigation of corn would begin in June, when the seedlings would be half-grown. They were irrigated 4 times during the growing season. Farmers started harvesting corn in October, because when the weather cools down, corn seeds begin to fall in the cold. Corn was harvested with a sickle, the stalks were kept on the roofs of their houses, and in winter the stalks were used as fodder for livestock. The Khiva people planted corn in large areas because its stems were very good fodder. It was planted mainly on the trail of wheat, that is, after the harvest of wheat, corn was planted as a second crop on the vacant land. It was also used as fodder for livestock when the corn crop was not ripe. In particular, in 1981, all the corn grown in the khanate was used as fodder for livestock. Due to the fact that corn is a very productive plant, one desyatina (1 desyatina - 2400 m²) of land harvested from 130 to 260 pounds, depending on the navigation.

The next main crop in Khiva khanate was considered rice. Rice is an aquatic crop and therefore requires a lot of care. In the Khiva khanate, the rice fields were fertilized not with manure, but with licorice or humus of buyan, a common plant in the khanate. The fields were sprayed with 54 tons of fertilizer in a row on one desyatina of the land, then irrigated with water, and when the field is dry, the land is plowed 8-9 times. At the end of the process, the land was irrigated again and then the seeds were sown. Rice was planted in May, a few days after the corn, in July the rice fields were completely covered with water and the water must move around the field. To do this, a hole was dug on the other side of the rice fields to allow water to escape. After that, the rice would continue to grow without further irrigation. Farmers harvested rice in September. One pound of land yielded 130 pounds. Because rice requires a lot of water, it is grown on large areas that can be irrigated without furrows.

Among the plants widely consumed by the population, they also grow legumes. Examples of these are green gram and beans. These crops were always planted in areas where wheat or barley were harvested during the second crop season (July). Green gram is not fertilized like barley. Moss lands were irrigated once the wheat was harvested and seeds were sown. Green gram was irrigated only twice during the growing season. Green gram were harvested in September. One desyatina of land yielded 50 pounds.

As for field plants, Khiva residents mainly grew onions. Onions were planted by farmers in sandy fields. They also knew how to plant onions

with grapes. The onion fields were fertilized only with sand, once irrigated and in April the onion seeds were sown. 300 pounds of onions were taken from one desyatina of the land.

Flax, hemp and sesame were also planted for oil. Sesame, like green gram, was planted in the vacant fields after the wheat harvest in the second sowing period. Sesame fields were not fertilized separately. Only once the land was irrigated and cultivated, it was enough. Sesame was watered 3-4 times during the growing season. Sesame was harvested in September and yielded 45 pounds per desyatina. The next type of plant to be used for oil production is hemp. 1,000 tons of sandy fertilizers were sown on the hemp field, the land was irrigated 5-6 times. When the seedlings sprouted, they were watered 4 times. The crop was harvested in September. 60 pounds of seeds were taken from one desyatina of the land.

The next crop is cotton. Oil is also extracted from cotton. In addition, cotton yarn is spun and fabric is made. "The length of cotton is up to one arshin. Each bush has 12 to 40 balls and cotton inside them," O.O. Shkapsky said. [1] Manufacturing factories in Russia at that time processed raw cotton from the United States, Turkestan, Bukhara, and, of course, Khiva. In the past, cotton was imported only from America, but in the late 19th and early 20th centuries, cotton was mainly imported from Turkestan, Bukhara and Khiva khanates, as well as from the Caspian region. At that time, 3 million pounds of cotton were imported to Russia from Central Asia. Over time, the Russians' demand for Central Asian cotton would increase. This is due to the fact that the seeds of Khiva cotton were much cheaper and more durable than American cotton. In addition, the difference between Khiva cotton and American cotton is that its bud is not opened, but cracked.

Cotton is planted on well-cultivated lands, 800 t of sandy fertilizer was applied to each desyatina of the land. The land was irrigated 3 or 4 times (sometimes 5 times) and plowed 5-10 times. Cotton seeds were sown in April. Cotton fields had not been irrigated all summer. If necessary, irrigated 1 or 2 times, not more. Cotton was harvested three times in the summer, from mid-August to the end of September. 100 pounds of balls were taken from one desyatina of the land from which cotton was extracted by hand during the winter months, and machines separated the cotton from the seeds. According to O.O. Shkapsky, in the past Khiva people used hand looms to separate cotton from seeds. [1] However, by the middle of the 19th century, cotton was separated from the seeds by sawing with special machines. There were 14 Russian ginneries on the banks of the Amu Darya. The ginned cotton was turned into high-pressure



bales at the factory, each bale consisting of 8-10 pounds of cotton, which was loaded on camels. Cotton was transported by camels to Orenburg, by boats to Chorjoi, and by rail across the Caspian Sea. One desyatina of land yielded 100 pounds of balls and 20 pounds of pure cotton. Depending on the navigation in the market, the price of a pound of cotton was 4-7 rubles. A gross profit of 80-140 rubles was obtained from pure cotton on one desyatina of the land.

They also tried to plant a large amount of clover, as it gave good yields for 8 or even 10 years. Every spring, 800 tons of land are planted to ensure a continuous harvest. It was necessary to fertilize with sand. From the second year after sowing the seeds of this plant begin to bear good fruit. However, the Khiva people started harvesting clover in the first year. To do this, farmers planted clover in a muddy area after the first irrigation after the harvest of wheat. The Khiva people harvested clover with a sickle. The Khiva people did not know about the Russian raids. For this reason, farmers mainly used sickles to harvest agricultural crops. This is mentioned in Mahmud Kashkari's *Devonu lug'ti-turk*, which also mentions the sickle in the form of "arghucha". [3] In this work, wheat is also called "tariq", and in Oguzs, wheat is called "ashliq". In this play, the cotton plant is also mentioned, that is, "He produced the seeds of cotton." [3]

Khiva residents also grow melons, watermelons, pumpkins, carrots, marena, potatoes and cabbage. Cabbage and potatoes are grown mainly for sale to Russians. 800 bags of fertilizers were spread on one tenth of the land for planting these crops. The lands were irrigated 3-4 times and cultivated up to 10 times. After the melons were planted, work began to limit the melons. Ditches were dug for drainage and the soil was dumped along the sides. Three arshin ditches were dug for melons, pumpkins, cucumbers, watermelons, and one arshin ditches for carrots, cabbage, and *Rubia tinctorum*. In addition to these ditches, boundary pits were dug, the width of which was 7-8 crops.

In Mahmud ibn Wali's "Bahr-ul-Asror", in the section on the Balkh region, its geographical location, people, melons and vegetables, he reported on the products grown and imported there, and on the kuktarnay melon of Khorezm, black melon, mullah payandagi and daroyi of Bukhara, zagare melon and cherry of Samarkand, peaches of northern China, mulberry trees of Khorezm, apricots called charkhi of Margilan, sangak apple of Samarkand and others were brought to Balkh and even started to be grown there. [4]

Khiva melons were famous for their size and taste. The length of each melon was three-quarters of an arshin, and its size was more than six vershoks. This boon requires sandy soil, so it grows

well in Khiva. Watermelons are also widely grown. Both melons are among the most widely grown crops in the khanate.

Khiva melons were also popular in Balkh at that time. It is known that melons do not grow without water, and if watered a lot, they are not so sweet. Mahmud ibn Wali tells about the secret of growing melons in Khiva without irrigation. According to him, the long root of the sapling is cut lengthwise and melon seeds are placed on it. Melons are fed with sap root juice until they grow and ripen. Such a melon was big and sweet. [4]

In the 1840s, a number of articles about the Khiva Khanate began to be published in Russia. In particular, G. Gilmersen's article " Khiva in its current state ", published in 1840, states that the customs duty on caravans was collected in cash and did not specify the exact amount of tax, the tax was collected first in Urgench and then in Khiva. He told about the khanate's crops such as melons, watermelons, squash, yellow and white turnips, radishes, carrots, sugar, peas, onions, Turkish beans, cucumbers, potatoes, because Khiva was not rich in fruits. It was very expensive and was bought only by rich people. Raisins and oleander were brought from Mashhad and it was used in the preparation of vodka. One pound of Iranian raisins cost 16 coins (8 rubles). Weak vodka was made from local grapes, and one of its stems (wine equal to one-tenth of a bucket, the size of vodka and the same amount of vodka, wine) cost 5 coins. [5]

According to P. Nebolsin, in the middle of the XIX century Khiva developed trade relations with Iran and Bukhara, a clothing wrapping with small flowers and green edges, large bouquets was brought from Iran and Mashhad to Khiva, about the size of 36 arshin (0.711 meters in length), ie 25 m). and a width of 11-12 vershok (a unit of length equal to 4.4 cm) (48.4-52.8 cm). A piece of such a clothing cost 1.5 to 2 gold coins

Coins, Russian and local leather, Russian broadcloth, Khiva silk, sesame and other products were delivered from Khiva to Iran. Green tea was brought to Khiva from Kashgar via Kokand. [6] In the Khiva khanate, the main type of farming in the 19th century was grain growing. More than half of the arable land is allocated for wheat, corn, and about one-fifth for cotton. The rest of the land is roughly evenly distributed with barley and rice, flax, sesame, melon and watermelon. Although horticulture played a less important role in the economy, apricots, vines, apples, pomegranates, pears and other fruits were also grown in Khiva gardens. [7]

According to Muravyev, various crops grown on the khanate's lands, such as wheat, millet, sesame, corn, etc., were sold to Turkmens from different parts of the Khiva khanate at a much higher price. When buyers arrived, the khan imposed the



death penalty on all Khiva residents to ban the sale of grain in order to pay for all his grain at any price, thereby increasing the price of his grain. [8]

Muravyev describes the lands of the Khiva khanate as follows: "The arable lands of this khanate form a magnificent landscape. Everywhere there are green fields, fertile crops, vineyards and orchards along the canals, the owners of which live in abundance. The amount of grain grown in the khanate is much higher than the needs of the people (upper class). Overpaying for grain is an important part of their business. Their neighboring nomadic tribes: the Balkans, the Mangyshlak peoples, the Kyrgyz, the Kazakhs, some Turkmens, and the Ata and Taka tribes buy grain wholesale from them. The people of Khiva grow mainly wheat, because in their country the grain harvest is very rich, and most of it is sold on the market." [8; 7]

DISCUSSION

In the Khiva khanate, the lack of fertile land was not the only problem, and watering the fields and timely irrigation of crops also posed significant challenges for agriculture. Especially since rice is a water-intensive plant, planting and caring for it is considered to be a difficult process. The reason was that it was not possible to grow rice in the fields, as water was pumped out of the fields. Because we take into account the fact that each melon requires a separate livestock to install a separate lane and turn these lanes, then farmers have to work in the fields all summer without rest. This is impossible for an ordinary farmer whose income consists only of the produce of his land. In particular, the majority of Khiva residents tried to grow cotton, but it was not possible, as it was possible to get a good profit from the cotton crop, which is a technical crop. This was due to the lack of arable land in more than half of the population. For this reason, they mainly planted grain crops such as wheat, corn and clover, alfalfa. These crops are not only food for themselves, but also fodder for livestock.

CONCLUSION

According to the archives, 300 batman (1 batman - 20 kg) of wheat and 750 batmans of rice were seized from the lands of Kilich Niyazboy district. Then the amount of grain grown by slaves was showed in decline: 400 batmans of rice, 40 batmans of cotton, 30 batmans of corn, 150 batmans of green gram. A total of 4690 batman. [9] According to the archives of the Khiva khanate, in fact, grain growing was the main activity in the khanate. In his memoirs, Russian Ambassador Nikolai Muravyev notes the following. The main income of the khan came from the sale of grain and melons grown on private lands. [8] The khan's private lands were

irrigated by many pipes and cultivated by slaves, as well as by the sarts, who had been deliberately relocated for agricultural purposes, and by the inhabitants of several villages in Karakalpakstan. The khan exempted them from the cauldron tax for this obligation. Taxes brought great benefits to the khan. Therefore, there were many types of taxes imposed by the khan. The main tax was levied for the use of water. The land of the Khiva khanate is mostly sandy and unproductive, so it requires a lot of fertilizer, but due to its properties, farmers tried to flush out the rotten substances. The land was very fertile, so all the work and skills of grain growers were focused on the artificial drainage of water, and the land is estimated not by the number of swamps, but by the number of pipes that irrigate it. Thus, the rented water brought great benefits to the khan, as the population ate grain, and they have a great need to it.

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