

History Of The Spread Of New Varieties Of Fodder Crops In Turkestan In The First Quarter Of The XX Century

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Abstract – This article covers the history of the introduction of fodder plants and crop varieties into the Turkestan region during the Russian Empire and Soviet rule through sources and literature. The selection and experimental work on new varieties of corn, alfalfa and other fodder crops, which entered the country in the early twentieth century, are also studied in detail in this article.

Keywords – New crop varieties, Turkestan region, corn, alfalfa, livestock, crop, plant migration, experimental station, cereals, yields, Russian settlements, clover, peach, Persian alfalfa, agronomist, breeder, crop rotation.

I. INTRODUCTION

Plants can be divided into a number of groups depending on their characteristics. From fodder plants to livestock, oats, alfalfa, weeds and others are very important for the development of an important link in agriculture. Today, the ongoing development of agro-industry in the world requires the intensive introduction in agriculture of innovative methods and promising technologies for the creation of new varieties and species of ecologically flexible plants that are suitable for the regional environment. At the present time, when environmental problems are growing, it is important to generalize historical experience in the establishment of forests against soil erosion, the creation of new plant varieties, selection and acclimatization of plant species resistant to drought and various diseases. Historical evidence confirms that from the 60s of the XIX century to the beginning of the XX century, hundreds of new crops were "migrated" to Turkestan on a large scale. It can be witnessed that these varieties of crops entered the country through the mediation of the resettled population, agronomists and breeders, amateur gardeners, amateur farmers, some officials and administrators, agricultural scientists, tourists and traders.

One of the cereal crops that came to our country in the early days of the Russian Empire was "white corn" (corn), which was used to make flour and fodder for cattle, while the stalks were used for cattle and horses.

Oats, like alfalfa, are an important plant in increasing the fertility of soils where other crops are grown, in absorbing the amount of salt in the soil. Importantly, the yield of oats is relatively high compared to other cereals, with yields ranging from 150 to 180 puds of irrigated land per 1 dessiatin.

New varieties of corn have been acclimatized at the Tashkent Experimental Station since the late XIX century. Varieties such as "King Philip", "Nanerottiollo" and "Sekler" were tested and their growing season was determined initially. Later, American varieties such as "Chicvantino" and "Kutaisi hybrids" were cultivated. It was not long before the "Menna" variety was introduced

The most common type of fodder crop for livestock in Turkestan was alfalfa, and local alfalfa occupied a considerable area of arable land. Alfalfa is a perennial crop and is a staple food for livestock including large- and small-hoofed domestic animals, horses and camels in summer and winter; it was also used to extract the salt in the soil. This type of plant is planted in spring and autumn, the clover is harvested 3-5 times a year, dried in the wet state and given in winter as fodder for livestock. Wealthy families planted alfalfa on 20-30 Ares of land. In 1890, 400 fascicles of alfalfa were sold for 1-1.5 rubles in summer and it even cost up to 3-4 rubles in winter. In 1901, the alfalfa fields of the Fergana Valley were 39,565 desiatins, in 1902 - 44,970 desiatins, in 1903 - 50,429 desiatins, in 1904 - 45,947 desiatins. Kyrgyz farmers harvested hay from the hay plant, which grows wild in Russian settlements, and collected fodder for livestock. After the cotton fields expanded and the alfalfa fields decreased, the price of 100 fascicles of alfalfa rose to 8-10 rubles in winter. Work has also been done to create new productive varieties of alfalfa. According to one source, "In Fergana, uezd and zemstvo administrators do not pay enough attention to the development of new crop varieties for livestock and the agronomists who create them. If attention was paid to them, it would be possible to acclimatize many new grass varieties. Also, instead of 60-80 students in 6 agricultural schools that train agronomists, the number of students in 6 classes in each school will not exceed 20-30". [4.64.] - the critics said. The growing season, nutritional value, yield, price of alfalfa were analyzed in detail by Russian agronomist A. Shakhnazarov. [10.77-86.]

From 516 puds to 800 puds of hay were harvested from 1 dessiatin of land, 1 pud of alfalfa seeds were sold for from 1.6 to 2 rubles and from 2.15 to 2.70 rubles when the price increased. Farmers earned 48 rubles per dessiatin of alfalfa seed, and in 1897, 20,000 pounds of alfalfa seeds were exported from Samarkand to Odessa. [10.85-86.]

Clover¹ (Russian alfalfa) imported from Russia as a forage crop was acclimatized in Turkestan, and special attention was paid to the distribution of this legume, which belongs to the legume family. This plant has been proven to be more beneficial compared to local alfalfa (lucerne).

In fact, red clover, which is native to Europe, North Africa, then Siberia, Kamchatka, the European part of Russia, the Far East, was also acclimatized in Turkestan. Red clover has a floral color and grows up to 55 cm, it has 2-year-old, perennial varieties, 3-lobed leaves, red inflorescence. Red clover is both edible and medicinal plant; the early ripening variety blooms in June, the late ripening variety in September and its fruits ripen.

At the end of XIX century, seeds of a number of grass varieties were imported from Turkey and adapted to livestock. However, they did not give the expected result that were obtained from plants such as local alfalfa, clover, red clover. [11.123-125; 13.1-2.]

"Shabdar"² Persian alfalfa, a new food crop cultivated in Turkestan and imported from Iran's Mashhad province, is a night plant. Its acclimatization work has been going on for a long time. Shabdar is also a native variety grown in India and is called "Shaftal". [14.294.]

¹ Clover is a 1-year-old, perennial, spreading root, the leaves are three-lobed, reddish-white, in some cases unusual color. There are 244 species on the Plant Base list. Honey is also extracted from it. Clover honey is colorless, fragrant, flavorful and healing. [[https:// Vu.m.Wikipedia.org /wikip. klevert](https://Vu.m.Wikipedia.org/wiki/klevert)].

2) Shabdar (night clover) is a 1-year-old and perennial plant, it produces nectar, grows up to 70 cm in height and has 1-2 cm of leaves. Blooms in June, has proven to give honey. [V.772.ru/rms-ProdID0+ Shav/1676 him.].

Shabdar is a nutritious plant that feeds and fertilizes cotton fields by alternating planting, covering the underside of fruit trees with green grass and acting as a green manure. At the end of XIX century, one-year seeds of shabdar seeds were brought to Turkestan, and then 3-5-year (perennial) seeds were brought and conditioned. [12.766-769; 13.1-2.]

In 1907-1908, a few puds of shabdar seeds were brought from Mashhad (Iran) by the Russian agronomist Ulyanov. These seeds were successfully tested. In particular, shabdars were planted at the Desert Experimental Station, and in 1907 1 pud 10 funt of shabdar seeds were tested 5 times in 1 dessiatin of land. In the wet state of the ground at the 25 sq / sajen experimental station of Shabdar, in the 1st harvest - 14 pud 17 funt (compared to 1 desyatina - 1300 pud), in the 2nd harvest 12 pud 12 funt (1130 pud), in the 3rd harvest 6 pud (550 pud) was harvested. Shabdars are watery, wet like cabbage, and retain 1/4 of their weight when dried. Shabdar is convenient to plant alternately, to feed it. In addition to shadbar, French ryegrass (alfalfa), alfalfa varieties such as sainfoin, thyme, rebrika, English alfalfa, which would be ready to be harvested in 2 years were introduced. [2.168-171; 6.637-639.] The 2-year and 7-year-lasting English alfalfa varieties recommended by the Agricultural Department of the Russian Empire were tested at the Steppe Desert Experiment Station. In 1908, 125 puds of harvest from 1 dessiatin of English alfalfa and 75 puds of harvest from local alfalfa were harvested, and in 1909, when the harvest was struck by insects, 30 puds from English alfalfa. Turkestan alfalfa was proven to be less resistant to insects than the British alfalfa in preserving its flowers and shrubs. In 2 years, 33% of British alfalfa and 19% of Turkestan alfalfa retained their bushes. The number of flowering branches in English alfalfa was 10, in Turkestan alfalfa 6, the weight of 1 bush alfalfa in English alfalfa was 145 grams, in Turkestan alfalfa 72 grams, and the number of seeds was 9 to 6. The esparto variety of alfalfa was pink - red-flowered, fragrant, with a lot of bees landing on its flowers and collecting honey. [15.25.]

Professor of the Brooklyn School of Agronomy in Dakota, USA, N.E. Ganzen visited Russia four times in the late XIX and early XX centuries. When he traveled across Turkestan in 1898, he took 900 kg of local alfalfa seeds and a large amount of shabdar seeds, to acclimatize there, to his homeland as a plant variety that would serve the economic power of the United States. [12.770.]

Professor N.E. Ganzen acclimatized nutritious and medicinal plants and fruit tree seedlings growing in the Turkestan region in Dakota, USA. The scientist created new varieties of watermelon, orange, plum, by means of hybridization, grafting, mixing different seeds. His method of hybridization was based on Mendel's law, and the results obtained in this direction are called "Mendelmans". N.E. Ganzen exchanged his views with R.R. Schroeder, with whom he had a scientific and friendly relationship, on the issue of acclimatizing plants growing in the arid climate of southern America, resistant to heat and cold, requiring less water in Turkestan. [12.766-769]

Not only N.E. Ganzen, but also another American botanist, scientist and expert, Anter Bjorbenk, had looked for plant varieties from Turkestan that were beneficial to humans and suitable for acclimatization on non-irrigated lands. He found a cactus variety in South Africa with soft leaves, sharp and not too long spines. He told the U.S. Congress that he had created a new variety of cactus that could produce 200 tons of nutritious fruit for the livestock from 1 acre of land. There were practical attempts to acclimatize the cactus variety created by an American expert in Turkestan as a new plant for livestock consumption, but the expected result was not achieved. [3.123.]

There is a wide geography of areas where root crops and weed grows, which cover the paths with green grass along banks of bodies of water, and it is widespread in North America, Central and Southern Europe, Southern Russia, the Caucasus, West Asia, mainly around the Caspian region of Turkestan. N.E. Ganzen took its seed to South America. One dessiatin of the land planted with weed was harvested from 350 to 700 puds. This root crop was an important fodder for horses, camels and cattle. Experiments on obtaining new varieties of weed and expanding the area of use of this plant were carried out in Tashkent and Samarkand experimental fields. [1.780-783]

The study found that in the early XX century, along with the acclimatization of completely new plant varieties in the Turkestan region, the cultivation of medicinal and edible plants for humans and domestic animals growing wild in the deserts and mountains of the region was actively carried out. In particular, the creation of new varieties of shrubs became urgent, and even from the Far East black bush seeds were imported and acclimatized in the country. Attempts to acclimatize some plants, namely South American cactus, palm tree, rubber, etc., did not yield the expected results. By the 1950s, due to the sharp expansion of cotton fields and the fact that Uzbekistan occupies the bulk of arable land, the area under corn and alfalfa for livestock was decreased, and attention to their cultivation was declined. [8.112; 16.916.]

II. CONCLUSION

At the beginning of the XX century, dozens of plant varieties, flowers and new varieties of fodder crops were introduced to the Turkestan region. Among the new varieties of plants acclimatized to local conditions were fodder crops for livestock, such as red clover, English alfalfa, French ryegrass, esparto, timofeevka, rebrika, and dozens of new varieties of corn. In order to develop the field of botany, a number of wild plant varieties were cultivated by crossbreeding, effective selection and seed work was carried out. Historical evidence confirms that positive progress was made in this area.

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