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## BIOECOLOGICAL FEATURES OF RIBES NIGRUM L. IN THE CONDITIONS OF KARAKALPAKSTAN

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### **Abstract.**

*the article presents the results of a study of the bio-ecological features of Ribes nigrum L. introduced in the conditions of Karakalpakstan.*

### **Key words.**

*blackcurrant, bio-ecological features, experience, cysts, flowering, fruiting, berry, phenology.*

Blackcurrant (*Ribes nigrum* L.) is one of the most significant crops in terms of drought resistance, winter hardiness and low soil requirements, high yield, resistance to pests and diseases, valuable taste characteristics of berries that are suitable for fresh consumption and for processing. At present, land relations have changed, and the attitude of people towards gardening in Karakalpakstan has also changed. It became obvious that it is profitable to engage in it, only you need to start with berry crops. Blackcurrants quickly bear fruit, propagate easily, providing high profitability.

Research objects. Currant seedlings of local selection were studied. The studies were carried out on the collection plots of the Karakalpak State University and at the estate plots of planting in 2020-2021, 2022. The plots were planted with seedlings of the same age, in the amount of 30 accounting plants of each sample in three repetitions. Layout 3x1 m.

Research methodology. The study and study of samples were carried out in accordance with the methods according to the methodological guidelines: Program and methods for the study of fruit, berry and nut crops. (1999) [3]. For statistical processing of the research results, the method of dispersion analysis was used

(Dospekhov, 1985) [2]. The beginning of the phase of vegetation and budding in plants was noted in the period of the appearance of formed sprouts, small buds. In the phase of the beginning of flowering, the first flowers opened in plants, mass flowering - opening of more than half of the flowers, and the end of flowering - with the remainder of single open flowers. For the onset of phenological phases, the need for heat was determined by the sum of average daily positive active temperatures above 5°C.

According to the morphological and structural components of plant productivity, we studied and measured the length of the racemes, counted the number of flowers and berries in the raceme, the percentage of set berries in the raceme, the weight of berries from the bush, the average and maximum weight of one berry, the number and weight of seeds in the berries. The measurements of the raceme were carried out with a measuring ruler along the length of each of the black currant varieties. The average weight was calculated by weighing one hundred ripe berries. Harvest accounting was carried out by bush, by weighing containers in kilograms. Yield per hectare was calculated by multiplying the number of plants per hectare by the average yield per bush. During the full ripening of the berries, weight was taken, collecting 100 pieces from each sample and weighing them on a laboratory scale. By dividing the total weight of 100 pieces of berries by the number of 100, the average weight was determined. The mass of the maximum weight of the berry was determined by weighing. The one-dimensionality of the berries was noted visually in the field at harvest, which did not differ significantly in size when distributed along the entire length of the raceme on different shoots (one-dimensional, medium one-dimensional, not one-dimensional).

Blackcurrant belongs to early-ripening, perennial and multi-stemmed shrubs 1-2,5 m high. The bush is annually replenished with new underground shoots and above-ground shoots with growth and generative buds. They grow most strongly in the first 2-4 years, especially in the year of their occurrence. In the future, the elongation of the central axes is weaker, stopping when the upper flower bud is laid, it most often forms at the age of 7-8 years. Blackcurrant 8-10 years old is a shrub with numerous branches of different ages from 1 year to 8-10 years. Their replenishment is due to the annual emergence of young shoots, the number of which decreases with age. The branches are reddish-brown in colour, the bark darkens with age.

The bushy form of *Ribes nigrum* L. is formed by shoot systems of the primary shoot, formation shoots and formation shoot systems. The life form is a geoxyle shrub, i.e. formation shoots arise more often from dormant buds below the soil level. Depending on the genotype, the bush can have a compressed, semi-sprawling and sprawling shape. Bush diameter up to 2,9 × 2,5 m, height up to 3 m [1].

Our observation showed that the number of formation shoots depends on the age of the plant and can vary from 7 to 45 pieces. The growth of formation shoots in the first years of life strongly depends on the precipitation and soil conditions. On the 2nd year of life, shortened and elongated shoots from renewal buds begin to develop, a branch is formed. The life span of the shoot system of *R. nigrum* L. formation is short, but due to the annual formation of shoots and underground branching, dying shoots are replaced by new ones. It was also noted that black currant forms shoots of the formation in April, a greater number in the first decade, which begin to grow intensively, in 2-3-year-old bushes at the same time appears from 4 to 10. The powerful growth of annual shoots of the formation is characterized by a long internode, a large number underdeveloped dormant buds and buds in the upper third of the shoots. The average diameter of a three-year shoot at the soil surface is 1.5 - 2.0 cm. The buds are oblong, ovoid and small in shape.

The leaves are rounded 5-3 lobed green, the cuts of the lobes are deep, the lobes are obtuse, usually with 3 large teeth at the apex, the base is straight, slightly reniform or wedge-shaped, in September-October they become dark pink or yellow-red in color.

The beginning of the growing season for black currant in the conditions of the city of Nukus was noted in the third decade of March (21-27.03. 2021-2022). Racemes are 4-6 cm long, horizontal or drooping, 5-9 flowers. The beginning of flowering occurred from April 3 to 20 when the amount active temperatures and did not differ much from year to year. The duration of flowering is 15-20 days. This slight annual variation is an indicator of the adaptability of the species to environmental conditions. Differences in the passage of phenological phases are noted at the stage of berry ripening, which is associated with varietal characteristics. The beginning of ripening is depending on the variety, it is observed in the second decade of June - the first decade of July when the sum reaches active temperatures. The duration of the ripening period is from 10 to 15 days. This crop begins to bear fruit in the second year after planting with 1-year-old

seedlings, and in the fourth and fifth years, it gives a full harvest, reaching up to 4-5 kg per bush. The fruits are round, oval-ovoid, about 1-2 cm in diameter, black, shiny (1.7-3.3 g). The content of vitamin C is 140-150 mg %. They ripen unevenly. The taste is great, sweet. The highest actual productivity of black currant varieties (from 4.1 to 5.0 kg per bush) was Sevchanka, Selechenskaya 2, Exotica. The average degree of this indicator (from 3.5 to 4.0 kg per bush) was found in black currant varieties - Black Pearl, Green Haze, and Odzhebin.

In Uzbekistan, the Research Institute of Horticulture, Viticulture and Winemaking named after academician Makhmud Mirzaev is studying ways to grow new resistant varieties in the Fergana, Surkhandarya, Andijan, Bukhara regions and Karakalpakstan. The best varieties of black currant: «Dachnitsa», «Sensei», «Litvinovskaya», «Selechenskaya 2», «Sofya», «Lazy», «Pygmy». Varieties characterized by large berry size, good dessert taste, high content of ascorbic acid (over 160 mg %) and P - active compounds (over 500 mg %) in blackcurrant varieties Black Pearl, Exotica, Selechenskaya 2 have been identified.

Currant bushes take root easily and at any time from spring to autumn, but it is best to plant blackcurrants in autumn. Planting currants in the middle of autumn will allow the plant to take root over the winter and grow faster in the spring. A characteristic feature of blackcurrant is the absence of buds on the roots, so it is planted obliquely at an angle of 45, deepening the root collar by 8-10 cm, so that at least five buds remain in the soil, from which basal shoots will grow. The seedling is placed in a hole so that the root collar is 3-5 cm below the ground. There are buds at the base of the bush, and by deepening them into the ground, we will stimulate the growth of new shoots. At an angle of 45 degrees, the seedling is planted for better awakening of the buds along its entire length. If planted vertically, only the uppermost buds will awaken.

### Conclusions

Black currant is a widespread crop in the Republic of Karakalpakstan in amateur gardens, which is associated with its adaptability, stable yield over the years and relatively simple cultivation technology. In the conditions of Karakalpakstan, it is quite possible to cultivate high yielding, drought-resistant, with good indicators of biochemical composition and taste of berries in amateur gardening and farms. This crop is highly valued for its drought and heat tolerance.

### USED LITERATURE:

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