AGRICULTURAL SCIENCES

MODERN BUCKWHEAT VARIETAL RESOURCES IN UKRAINE

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Buckwheat plays an important role in human nutrition. Its cereal in terms of nutritional, taste and dietary properties, belongs to particularly valuable products. Biologically buckwheat can not produce such a high yield as corn or other cereals, but the quality of its grain is much higher than cereals, primarily in terms of protein content and degree of absorption by the human body. As a result of the production records as for the gross index, and not as for its range and quality of grain, buckwheat belongs to low value crops.

Low yields and limited distribution of buckwheat in the agricultural sector of Ukraine indicate that some technological aspects of cultivation of this crop are underresearched and, first and foremost, in specific climatic conditions. Today the biological features of culture, its requirements for major unregulated and regulated environmental factors, have been studied in great detail.

But in recent years, new varieties of buckwheat, developed microfertilizers, and biologically active substances have emerged that will significantly increase the yield of this crop. That's why, in order to increase buckwheat production in Ukraine, it is necessary to study more deeply the basic components of its cultivation technology [4, p. 25-29]. Buckwheat yield depends greatly on the proper use of weather conditions in the area of cultivation of this crop. Therefore, an important condition for success in obtaining high yields of buckwheat is the ability to maximize the use of weather factors, leveling extreme conditions with technology elements.

Various plant resources play a special role in the economic and social development of Ukraine. According to the findings of the scientists, in the coming years the whole world growth of crop production will be achieved due to breeding, i.e. new varieties, their useful properties and quality indicators. According to Zakharchuk O.V., by 2020 the share of the yield increase due to the new generation of varieties will be from 70-80% or 2-3 times higher than the current level [3, p. 21-29].

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The favorable natural and climatic conditions of Ukraine allow the selection and production of varietal resources of all types of cereals in accordance with regional conditions of production and needs of the seed market. According to the experts of the World Intellectual Property Organization and the European Bureau of Plant Varieties, in terms of qualitative composition and structure, varietal resources of Ukraine are the best in Eastern and Central Europe [5, p. 50-51]. Today, a number of new varieties of different cultures have been created by domestic breeding. They differ in morphological characteristics, biological properties, intensity, quality indicators, have different adaptive levels of resistance to adverse environmental factors, etc. [2, p. 16-19].

In almost every farm, every year, they think what varieties to prefer. After all, the composition of varieties listed in the Register of Varieties of Plants of Ukraine is constantly improving, enriching with new, more productive ones with improved economic characteristics. New varieties differ not only in morphological features, but also in early ripening, productivity, disease resistance, reaction to agrotechnical measures and conditions of moisture supply, etc.

Our analysis of the dynamics of entering buckwheat varieties in the Register of Varieties showed that over the last 15 years the number of buckwheat varieties included in the Register increased from 21 (2005) to 25 pcs. (2020) (Figure 1) [1, p. 182-183]. Compared to other cultures, the dynamics of creation and listing of buckwheat varieties are significantly slower. In our view, this is due to the small number of scientific institutions that carry out buckwheat breeding in Ukraine, as well as the effectiveness of breeding work. In support of this, it should be noted that in recent years, only two varieties of buckwheat, 'Simka' of the selection of the Institute of Agriculture of the North-East of National Academy of Agrarian Sciences of Ukraine (2017) and 'Kamianchanka' of the selection of Podillia State Agrarian and Technical University (2019), were included in the Register.

In Ukraine, buckwheat breeding is carried out by two state-owned scientific institutes, one educational institution and three commercial companies (Figure 2).

Analyzing the personal composition of buckwheat varieties included in the Register for 2020, it should be noted that 92% of the total number of varieties are created by domestic institutions and companies. Only two foreign varieties of buckwheat Deviatka and Dykul were created at the All-Russian Scientific and Research Institute of Legumes and Groat Crops, Russian Federation.

Scientists of the National Scientific Centre «Institute of Agriculture of National Academy of Agrarian Sciences» and the Institute of Agriculture of North-East of National Academy of Agrarian Sciences are working more productively on creation of buckwheat varieties – 8 and 7 varieties respectively.

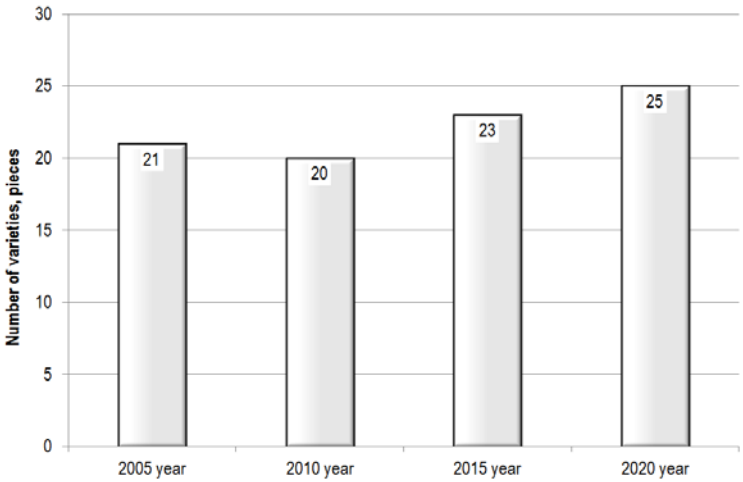

Figure 1. Dynamics of the number of buckwheat varieties included in the State Register of plant varieties suitable for distribution in Ukraine, 2005-2020

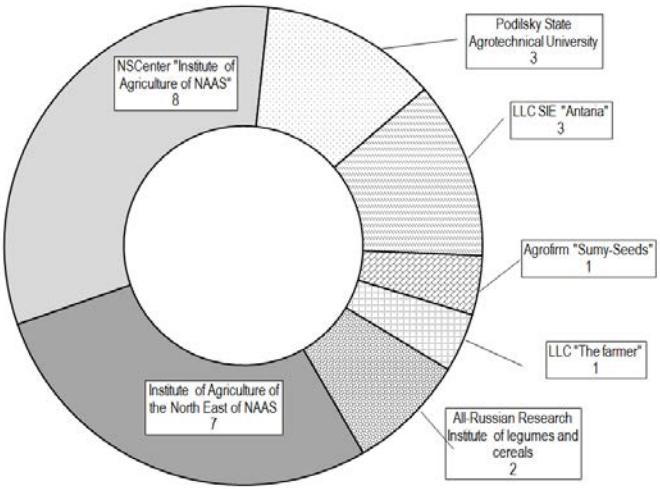

Figure 2. Structure of buckwheat varieties listed in the Register by section of originators, 2020

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THE EFFECT OF HUMIC FERTILIZERS ON THE CORN GRAIN YIELD

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Due to its properties, corn is used in human feed, animal feed, as well as industrial raw material for technical purposes and for the production of biogas and electricity. Corn grain is rich in energy, protein and fats but not very rich in minerals [1, p. 28-29].

In recent years, production has shown that not only the high level of yield of the hybrid is crucial in its choice for cultivation, but also the ability to maintain its high lower threshold in unfavorable growing conditions, which is determined by the adaptive potential of plants.

It should be emphasized that when receiving high yield of corn grain, while preserving soil fertility and its microbiological composition, it is not always possible to solve this issue with one element of technology –

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