CURRENT STATE AND PROSPECTS OF DEVELOPMENT OF BUCKWHEAT GROWING TECHNOLOGIES

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Modern technologies for growing field crops, including buckwheat, have the following properties.

1. Conservatism associated with the experience and qualifications of employees, technical equipment. In this sense, conservatism is positive and allows to consolidate and stabilize the accumulated experience and knowledge.

2. Zoning. All technologies of cultivated plants must take into account the features of the zone: climate, soil and others.

3. Environmental friendliness. This is a requirement of recent years, because agricultural production has become dangerous for the environment. Hence the idea to better study the biological characteristics of varieties to better manage agrocenoses.

4. Science-intensiveness, including biologization and intellectual level. This is a very important and difficult property of technology, because it requires overcoming the barrier of conservatism and improving the skills and technological discipline of workers.

5. Cost-effectiveness. Attempts to obtain record yields have caused a lot of damage to the environment. Therefore, it is advisable to get a harvest not «at any cost», but economically viable, with lower energy costs, without worsening the environmental situation.

According to CIS research institutions, the share of crop rotation in the yield of field crops is 5-10%, which is provided by the effect of crop rotation depending on the set of crops. The best for buckwheat are short-rotation crop rotations of four to five fields.

Narrow specialization of agriculture leads to the saturation of crop rotations with crops close to biology and technology of cultivation, denying crop rotation and growing field crops without alternation, is in monoculture. As a result, dehumidification and degradation of the soil is observed, its

agrophysical and agrochemical properties deteriorate, and weed infestation increases. Therefore, significant doses of pesticides have to be used against pests, and organic and mineral fertilizers have to be used to increase soil fertility, which significantly increases energy consumption and worsens the environmental situation.

The introduction of progressive farming systems is designed to radically improve the extremely congested agricultural landscapes, to prevent the destruction of soil structure, their compaction and the formation of plow soles. After all, due to the loss of soil aggregation, porosity, water permeability and aeration decrease, moisture losses through thin capillary pores increase, and due to the predominance of reduction reactions, soil acidity spreads. Representatives of Fusarium, Mycor, Penicillium fungi, which are normally indifferent, become pathogens and cause root diseases in plants due to soil compaction. In compacted areas, it is difficult for the root system to penetrate beyond the underlying layer. This, of course, negatively affects the overall productivity of the land and reduces the efficiency of fertilizers by 35-40% even with sufficient moisture. Lack of oxygen slows down root development and even leads to its death at growth points. At the same time, the root system of buckwheat needs to be placed in a loose plowed layer.

The first and basic principle of intensive technologies is the biologization of technological processes, according to which the plant is in the first place – as a biological object and a community of plants (phytocenosis) with a complex interaction of living organisms. Previously, biologization was insufficient, and one-sided industrialization of technological processes was observed. Intensive technology was mainly reduced to the efficient use of material and technical resources available in the economy and the introduction of scientific achievements and best practices. The plant was given secondary importance. According to M. E. Nikolaev, intensive technologies provide optimal conditions for plant growth and development in all periods through high-quality and timely implementation of the necessary technological processes. Here it is not the element itself, the link or even the whole technological process that comes to the fore, but their biologization, ie the creation of optimal conditions for plants of a particular variety.

The main task of buckwheat cultivation technologies is to improve living

conditions, including ensuring a sufficient number of nutrients. Biologization of technologies for growing cultivated plants to solve this problem includes: activation of the cycle of organic matter and nutrients; protection of the environment with a minimum of chemicals for harvesting; use of organic waste; energy saving through the use of nitrogen fixers ; biological tillage; preservation and increase of soil fertility (biological, physical and chemical).

The biological direction in crop production, like the traditional one, requires compliance with the following provisions in technology: the need to apply such an amount of mineral fertilizers, below which the size and quality of the crop may change; taking into account the nutrients in the small and large circuits; a sufficiently effective pest control system so that the use of pesticides is not mandatory.

Biologization of technologies for growing field crops is a purposeful formation of optimal parameters of the structure of the agrocenosis, which provide stable yields while optimizing nutrition and growing conditions.

Therefore, we can conclude that biologization is the implementation of agronomic measures at the stages of growth and development of plants; fertilization according to the balance of nutrients in the soil and according to plant diagnostics; orientation of technology on the formation of the leading parameters of plant productivity.

INFLUENCE OF PREPARATORS ON HARVEST AND BUCKWHEAT SEED QUALITY

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The main feature of intensive technology of buckwheat cultivation is good quality performance of the whole complex of mechanized works in strict sequence and in optimal time in compliance with agronomic requirements for each operation.

However, the conditions necessary for a high yield do not always coincide with the conditions that promote the formation of high-quality seed. This is evidenced by the types of seed yield established by M. M. Makrushin