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THE IMPORTANCE OF LEGUMES IN THE GROWING OF ECOLOGICALLY CLEAN PRODUCTS

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Abstract. Today in the countries of the world the cultivation and demand for ecologically and biologically pure products is growing. The cost of certified products in the world is on average 20% or more higher than the cost of agrochemicals grown products in agriculture. This will open new export opportunities for farmers and entrepreneurs of our country.

Key words: ecological, biological, agrochemical, fertilizer, farmer

Аннотация.Сегодня в странах мира растет спрос на экологически и биологически чистые продукты. Стоимость сертифицированной продукции в мире в среднем на 20% и более выше стоимости агрохимический выращенной продукции в сельском хозяйстве. Это открывает новые экспортные возможности для фермеров и предпринимателей нашей страны.

Ключевые слова: экологический, биологический, агрохимический, удобрение, фермер

It is known that organic agriculture is a production system that preserves biodiversity, improves the ecosystem, and protects human health without using chemicals that harm the environment. In this system, organic products are grown without the use of synthetic chemical pesticides, mineral fertilizers, antibiotics, artificial plant growth agents, and nutritional supplements, and ecologically clean and naturally delicious fruits and vegetables are grown.

Scientists have proven that ecologically clean products do not harm human health, do not have a negative impact on the health of future generations, and have high economic efficiency. According to studies, the consumption of environmentally friendly products has led to an increase in the average life expectancy of a person, a decrease in the prevalence of various diseases among the population, and other positive indicators for human health.

Many scientists around the world are engaged in the issue of growing ecologically clean products. They mainly conduct scientific research on the ecological, agro-technological and economic problems of producing ecologically clean products.

In our country, providing the population with quality food products, growing ecologically clean products and improving the environment is constantly in focus. The demand for cultivated fruits and vegetables is increasing in the world market, in particular in Japan, South Korea, and European countries. The Strategy of Actions on Five Priority Areas of Development of the Republic of Uzbekistan for 2017-2021, developed at the initiative of our President Shavkat Mirziyoyev, pays special attention to further strengthening the food security of our country. The tasks set in it include the modernization and accelerated development of agriculture, the

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expansion of the production of ecologically clean products, and a significant increase in the export potential of the agricultural sector.

It is noteworthy that the area of food crops is expanding, the agricultural production and processing industry is developing. This is of great importance in ensuring food security not only in Uzbekistan, but also in neighboring countries. Fruits and vegetables grown in our heavenly homeland are very valuable in the world market due to their richness in microelements useful for human health, various biological substances that are irreplaceable in the food diet. The culture of farming and gardening that has been formed in our country has long been based on the principles of biological farming, which involves the use of local fertilizers. Given this, the rational use and protection of natural resources, including land, is one of the urgent issues in our country, the fact that agricultural products are rich in microelements useful for health, various biological substances, the fact that traditional farming for many years has adapted to the cultivation of ecologically clean products and the need to continue work in this area, and the possibility of obtaining 2-3 harvests from irrigated areas of our republic during the year, it is extremely important to correctly select types and varieties of agricultural crops that contain high-quality protein in their composition and positively solve the problem of existing protein deficiency as a repeated crop. From this point of view, expanding the areas of leguminous crops in areas vacated by winter wheat will, first of all, provide the population with nutritious and high-quality products, and livestock with feed rich in vitamins and minerals. The grain of these crops is very rich in protein (25-45%). The amount of protein in the grains of these crops is 2-3 times higher than the amount of protein in the grains of cereal crops.

The issue of plant protein and the demand for environmentally friendly products are a serious issue in our country and around the world. They are of great importance in providing humanity with proteins containing essential amino acids. D.N. Pryanishnikov expressed the idea that the protein issue should be solved mainly at the expense of legumes. The fact is that one food unit of peas contains up to 200 g of digestible protein, and soybeans - up to 300 g. Therefore, legumes are not only excellent food and fodder crops in themselves, but also improve the utilization of a number of other fodder crops. Soybean and lupine seeds are especially rich in protein. It is 30-50%. The seeds of some legumes contain all the amino acids necessary for humans and animals, as well as essential amino acids (lysine, methionine, tryptophan, etc.).

The content of protein and amino acids in legumes strongly depends on their variety, soil and climatic conditions and agrotechnical characteristics. The protein content of the seeds of legumes increases from north to south and from west to east. From this point of view, there is an opportunity to obtain high yields from legumes in our country. For example, soybeans contain 30-52% protein, 20% carbohydrates, 18-25% ecologically clean vegetable oil, a large number of mineral salts, which can compete with the most important food products such as meat, milk, eggs in terms of their high-quality amino acids, and are of particular importance in preserving nutrients. The main protein of soybeans, glycine, is well digested, dissolves well in water, turns into yogurt when fermented, its protein is rich in essential amino acids. 40% of the total vegetable oil produced in the world is accounted for by soybeans. Scientific research shows that when soybeans are repeatedly grown, the vegetable oil content in the grain increases by an average of 3.5%. From each ton of soybeans, an average of 200-220 kg. of environmentally friendly vegetable oil can be extracted.

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Legumes are important in terms of plant protein, increasing grain production, forage production in livestock farming, and another important agrotechnical value is that these plants absorb atmospheric nitrogen, accumulate a large amount of biological nitrogen in the soil, improve the nitrogen balance in agriculture, and some of them convert insoluble phosphates into an assimilable form, increase soil fertility, and significantly improve the ecological and microbiological aspects of our soils. By expanding the area under legumes, soil fertility can be maintained and increased. Nodule bacteria live in symbiosis in the roots of legumes. As a result of the activity of these bacteria, nitrogen is fixed in the soil in the amount of 100-150 g. Nodular bacteria convert atmospheric nitrogen into a form that plants can absorb. According to M.V. Fedorov, lupine absorbs up to 400 kg, alfalfa - about 140 kg, peas and vetch - 100 kg, soybeans - 250 kg. In addition, leguminous crops leave a large amount of root, stem and leaf residues in the soil. These also rot and increase the amount of humus in the soil. Therefore, they are good predecessors for spring and autumn crops. One mung bean leaves 2.5-4.0 tons of root residues in the soil during the entire growing season, which helps to absorb poorly soluble phosphorus compounds in the soil. Legumes are the best siderate crops. When mung bean is used as a green manure, 70 s/ha of dry matter accumulates in the soil. This means 100 kg of nitrogen. According to scientific studies, when mung bean is used as a green manure, cotton yield increases by 40-60 percent. When beans are used as a green manure, soil fertility increases, especially its physical properties change, heavy soils turn into light soils, and loamy soils become denser. As inter-row crops, legumes increase soil fertility, enrich organic matter and nitrogen, and increase the water-physical properties and biological activity of the soil. Given the low content of humus and nitrogen in Uzbek soils, the use of legumes in crop rotation is effective. Legumes do not require separate land for crop rotation. They can be planted as the main crop in irrigated and fallow conditions. One of the internal opportunities for using irrigated areas is the organization of growing legumes as repeated crops on large areas. In Uzbekistan, the introduction of legumes into crop rotation on farms specializing in cotton, grain, vegetable, and livestock farming has a positive effect on crop yields and soil fertility. In particular, it is necessary to grow environmentally friendly products in agriculture.

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