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About the beneficial properties of legumes (soybeans and lentils)

Amonova G.R.
Asia International University. Bukhara, Uzbekistan
e-mail. gulshanamonova614@gmail.com

Relevance of the study. The article provides information on the beneficial properties of legumes (soybeans and lentils), their constituents, and their role in the treatment of diabetes, gout, and diseases associated with intestinal peristalsis.

Keywords: Soybeans, lentils, diabetes, fodder, amino acids, acidic and sandy soils. The role and importance of the agricultural sector in ensuring food security of the population on a global scale is increasing day by day. In our republic, large-scale measures are being taken to improve the culture of agriculture, to widely introduce scientific and technical achievements and advanced experience into production, to increase crop yields, improve their quality, and especially to ensure grain independence in our country. Fulfilling the task of fully providing the population of the republic with food, primarily grain products, is an important task.

According to their light requirements, legumes are divided into 3 groups:

1. Long-day plants - peas, lentils, beans, lupins and legumes. As the light day lengthens, their growing season shortens.

2. Short-day plants - soybeans and beans (some types of mung beans). As the light day shortens, their growing season shortens.

3. Neutral plants - many varieties of beans and peas.

According to the above definition, peas can be planted from legumes to the north, and vetch to the south. Weakly acidic or neutral loamy and sandy soils with sufficient P, K and Ca are considered very favorable for legumes. Very wet, shallow-watered and light loamy soils are unsuitable for legumes. With the exception of lupine, it grows well on acidic and sandy soils, but a high content of lime in the soil has a negative effect on it. Green peas can also be planted for fodder on sandy soils. Phosphorus and potassium are applied to legumes as the main fertilizers. They improve plant development and enhance the activity of nitrogen-fixing bacteria. Nitrogen fertilizers cannot be applied to legumes, because they themselves absorb atmospheric nitrogen, and it was believed that the applied nitrogen fertilizers would weaken nitrogen fixation. However, many researchers later believed that legumes, despite their nitrogen-fixing properties, require a smaller dose of nitrogen (30 kg per hectare) during the initial growth period, until nodules form on their roots. However, this issue is considered taking into account the conditions of growing legumes and soil fertility.

In our country, the expansion of soybean oilseed areas and the increase in the production of products from them are of great importance in fully satisfying the population's need for oilseed products and the consistent development of livestock farming. At the same time, the development and supply of vegetable protein is currently one of the biggest problems in agriculture. Among leguminous crops, soybean is of great importance in solving this problem. Soybean is an annual plant belonging to the legume family, native to Central Asia. Soybeans play an important role in the preparation of food, feed and in increasing soil fertility. Soybean grain contains 38-52% protein, 22-25% fat, and various vitamins in the fat, while straw contains 4-5% protein and up to 5% fat. Soybean grain has 2.5 times

more protein than wheat grain and 3.5 times more than corn grain, and the protein of soybean grain contains more than 10 amino acids. The green mass is used as feed for livestock. Like the roots of all legumes, soybean roots develop nodules that can use nitrogen from the air. Thanks to the nodules formed by rhizobium bacteria in the roots of soybean plants, they accumulate up to 150-250 kilograms of pure nitrogen per hectare. Soybean is a very ancient crop that loves light, heat and moisture.

Soybean is a plant that is very useful in medicine, effective in increasing productivity in livestock farming, and convenient for cultivation as a companion crop in agriculture. The soybean plant and its products are useful in diseases of the stomach and gastrointestinal system. Soybean is also effective in the treatment of diabetes. Despite the high protein content of lentils, it is important to remember that plant protein is incomplete. That is, in order to obtain all the essential amino acids, it is necessary to combine several sources of plant protein in the diet. It is often called the “king of cereals”. Lentils have been cultivated since ancient times. Lentils were first mentioned in ancient times in the Middle East and Egypt in 2400 BC. There are many varieties of lentils. They come in different colors - from black to bluish, and each color differs from the other in taste and cooking time. During the preparation of white, pink and yellow lentils, their skins are separated and they cook faster than other varieties. Lentils are a dietary product. They consist of 54% complex carbohydrates and 26% - proteins that are quickly digested by the body. In addition, lentils contain a very small amount of fat. That is why this cereal is an excellent product for those who watch their figure: dishes prepared from such a cereal are digested for a long time and give a feeling of satiety for a long time. Lentils are very useful. They reduce blood sugar levels, have a lot of connective tissue, and are in first place in terms of iron storage. Green lentils are the most useful: they are a grain that contains a lot of connective tissue. Lentils are an environmentally friendly product. Growing lentils does not cause any harm to the environment. They do not contain nitrates. Lentils are not recommended for everyone. They contain purine - uric acid, which can lead to kidney stones. People with gastrointestinal diseases should consult a doctor before consuming lentils. Lentils are rich in useful microelements such as calcium, magnesium, potassium, phosphorus, and iron. They also contain fatty acids such as omega-3 and omega-6, which are beneficial for skin and hair. Lentils are higher in folic acid than other legumes. Soluble fiber in lentils improves digestion. Regular consumption of porridge made from this product improves metabolism in the body, increases immunity. This legume is rich in B vitamins, vitamins PP, A, C. With its nutritional value, lentils can replace bread, cereals, and even, to a certain extent, meat. Like other legumes, the presence of magnesium in lentils helps the heart and nervous system function normally. It also contains tryptophan, and this amino acid, when ingested by the human body, turns into serotonin, which is called the "hormone of happiness." Experts recommend eating lentils to reduce blood sugar levels for people with diabetes. Porridge made from it is also recommended for the treatment of gastric and duodenal ulcers, colitis (constipation). Chinese doctors say that lentils are a warming food. Therefore, dishes made from them are considered healing on cold days. It is important to remember that along with the beneficial properties of this product, there are also harmful ones. For example, lentils are not recommended for people with gout, hemorrhoids, diathesis, diseases of the genitals, and kidney disease. Like other legumes, they contain an impressive portion of plant-based protein, which is especially important for vegetarians. A lack of protein in the diet can weaken the immune system, reduce muscle mass, and impair the health of the skin, bones, connective tissues, and brain. In addition, lentils contain a lot of fiber - a complex carbohydrate, which is similar to other carbohydrates only in its chemical structure. Fiber is not digested in the stomach and small intestine, and plays an important role in maintaining the gastrointestinal tract and controlling weight. Passing through the entire gastrointestinal tract, it removes undigested food residues from the walls, absorbs toxins and removes all this from the body, stimulating peristalsis. By cleansing the intestines from food residues and toxic substances, fiber cleanses the entire body.

Conclusion. In terms of nutrient content, all types of lentils are approximately the same, but green lentils contain more protein and calcium, they are better than red ones, and they retain the shell, which contains a lot of fiber. Red lentils set a record for the content of iron and potassium. These substances are necessary for proper protein metabolism, as well as for controlling the level of hemoglobin in the blood. But black lentils can provide the bulk of vitamin E and zinc. These two substances have a beneficial effect on the functioning of the endocrine, reproductive and nervous systems.

LITERATURE USED.

1. Mustafoyev.S.M. Botany Tashkent, 2002.
2. G.H. Hamidov, M.Kh. Akbarova, M.A. Davidov, M.R. Kholiqulov "Honey plants of Uzbekistan and prospects for the development of beekeeping" - Fergana 2019.
3. Meliboyev S., Isroilov Z., Abdunazarov., Tursunova Sh. "Medicinal plants found in the flora of Uzbekistan" // Fergana publishing house 2018.
4. Atabayeva Kh.N., Khudoykulov J.B. "Plant science" Tashkent "Science and technology" publishing house 2018.
5. Artukmetov Z. A. "Fundamentals of agriculture". Tashkent 2012.
6. Oripov O.R, Khalilov X.N. "Plant Science" Tashkent "National Society of Philosophers of Uzbekistan" Publishing House. 2007.
7. "National Encyclopedia of Uzbekistan" Volume 1 Tashkent 2000-2005.
8. Yormatova D.Khushvaqtova. H. Ergasheva.H. "Plant Science" Tashkent. "Ilm-Ziyo" 2016.
9. Tuygunovna, Sh.S. (2024). Medicinal plants containing essential oils. Online scientific journal of education and development analysis 4(3), 164-167.
10. Shukurova, S. (2024). Optimizing synergies: Effective strategies for integrating economic and environmental interests in sustainable development. In E3S Web of Conferences (Vol. 587, p. 04007). EDP Sciences.
11. Abdukarimov D., Safarov T., Ostonakulov T., Fundamentals of field crop selection, seed production and genetics, T., 1989