

SOYBEAN - A NATURAL SOURCE OF PROTEIN

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Demand for food is growing as a result of population growth. The need for food and protein is growing all over the world, including in our country Uzbekistan. The world's population lacks 20 million tons of protein each year. The amount of protein in fodder is also very low. The deficiency of protein in the diet significantly reduces the productivity of livestock, increases the consumption of food concentrates, the cost of the product and the consumption of fodder by 1.5 times.

In this regard, both livestock and the population need quality protein so that the food is rich in quality protein. A source of such quality protein is the soybean plant. It has been 100-120 years since soybeans were planted in large areas in other parts of the world. Over the next 30 years, the area under soybeans has grown rapidly [1-7].

Soy is one of the most important sources in solving the main problem today - protein deficiency. Because soy protein is chemically similar to animal protein, soybean cultivation is receiving a lot of attention in all developed countries. In Japan, shady lands are the third largest in terms of size after rice and vegetable crops. Japan is also buying large quantities of shade from abroad. These grains are used for various purposes. Nowadays, protein from soybeans is used to catch silkworms. 67% of artificial foods prepared by Japanese experts contain soy protein, 2% soybean oil, citric acid, B group vitamins and various other supplements. In Japan, silkworms are fed five times a year, and artificial food made from soybeans plays a big role in this. Soybeans are also used to make quality food. Soybean varieties developed in Japan differ from soybean varieties grown in other countries due to their high protein content [8-13].

Breeders are working to create varieties that are drought-resistant, able to grow in different soil conditions, adapted to herbicides and pesticides, fast-ripening and chemically high in protein and fat. The newly created varieties are superior to the previous varieties in that they do not lose their disease resistance and produce an average of 35-40 quintals per hectare [14-19].

One of the most important properties of soy protein is that it contains more than the amino acid lysine. 100 grams of soy protein contains 6 grams of lysine. It is quickly digested in the body and is biologically very similar to meat, milk and egg protein [15-23].

The amount of protein in soybeans is 14 times higher than in chicken, 4 times higher than in eggs, and 3.5 times higher than in beef. Soy is the most valuable raw material in the food industry, machinery and livestock. When oil is extracted from soybeans by heating, the protein content reaches 75%. This protein-rich product is called soy isolate. Used in the preparation of various sausages in soy isolate. The cost of soy protein is 25 times cheaper than milk protein and 50 times cheaper than beef protein. If 800,000 tons of soybeans are grown, that means 320,000 tons of protein. To get this amount of protein, you need to grow 4 million 200 thousand tons of meat [24-27].

When soy flour is added to bread, sweet cakes, pasta and whole wheat products, their protein content increases. Now, U.S. scientists have developed a new recipe for baking bread. They suggested baking with the addition of 7-8 per cent soy, which increases the protein content of the bread and makes it very soft. Such bread does not harden quickly, the dough rises most quickly, and the porosity increases even more. Because wheat flour contains 14 per cent protein, soy flour contains 50 per cent protein. The caloric content of soy flour is much higher than other flour. If 100 grams of wheat flour has 360 calories, pea flour has 320 calories, oatmeal has 385 calories, buckwheat flour has 345 calories, and soy flour has 450 calories [21-27].

When making various cakes and cookies, it should be low in gluten. In such cases, adding it to the shade gives a very good result. By adding soy to foods, their shelf life increases by one and a half to two times.

When 12.5 per cent soy is added to wheat bran, its digestibility is 80 per cent, and when 23 per cent is added, 95 per cent of the protein is absorbed by the body.

Degreased soy flour is used in the confectionery industry. Cheap chocolates are now on sale in stores. They do not contain coffee, but coffee made from soy. Consumption of such chocolates is harmless to both young children and sick people. Recently, the technology of extracting oil from soy flour in oil refineries of the Republic has been well studied. A new oil plant for the production of soybean oil with a large capacity has been launched in the Kasan district of the Kashkadarya region. In recent years, the Samarkand region's Kattakurgan oil refinery has also been producing soybean oil. The amount of lecithin in soybeans is slightly higher than in eggs.

8-10 kg of pure lecithin is obtained from one ton of soybeans. If we get 9.4 quintals of soybeans per hectare, we will save 4,000 eggs. Because lecithin in 4,000 eggs can be obtained from 3.4 quintals of soybeans. Lecithin is one of the main raw materials in the production of products such as plastics. Soy contains two to three times more protein than regular beef. If the protein in the meat is 18-25%, the protein content in soy flour isolate reaches 80%. At present, 10-15% of soy sausages are added to the sausages produced in the sausage production shops of meat factories in the country.

The amount of protein in one kilogram of soy flour is equal to the protein in 2-3 kilograms of beef. The amount of phosphoric acid in soy protein is twice as much as in normal meat, and the amount of minerals is four times higher. Phosphoric acid is very important in the human body. It improves bone formation, carbohydrate metabolism and muscle function. Pure soy isolate improves the physical and biological properties and the taste of food increases its nutritional value.

Abu Ali ibn Sina, the founder of medical science, wrote in his works about the healing properties of the shadow. Soy products are the best food for young children, the elderly and almost all patients, he writes. It is known that soy contains all the substances necessary for the growth and development of a living organism, such as protein, fat, mineral salts, vitamins, milk sugar, and various enzymes. The substances in soy are quickly digested by the human body.

Meeting the demand of the population of our country for soy products is one of the most pressing issues today. There is a growing demand for soy products in this area as well.

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