TECHNOLOGIES USED FOR PLANTING OF SOYBEAN VARIETIES IN BUKHARA REGION

Aminjonova Charoskhan Akmalovna
Doctoral student of Bukhara State University
https://doi.org/10.5281/zenodo.13903475

Abstract: the article describes the technologies used to grow high-quality soybean varieties (Zamin, Zara, Chara, Olmos, Bars, Arisoy, CK Optima Ru2) in our country, their role and importance in human life.

Key words: legume, protein, oil, carbonated water, tillering, flowering period, early varieties, stem, leaf, dry weight.

Soybean is a group of annual herbaceous plants belonging to leguminous family, leguminous grain and oilseed. Homeland - China. It was first planted in Uzbekistan in 1975. The stem is rough and grows upright. Its height is from 15 cm to 2 m, it branches, it has 2-8 side branches. The fruit is a pod, yellow, black, brown, hard. Each pod contains 2-6 grains, contains 24-45% protein, 13-37% fat, 20-32% carbohydrates, and vitamins.

The growing season is 75-100 days. Soya is a heat-loving and moisture-loving plant, a light-loving short-day plant. It develops well at 21-23°C. The seed germinates at 6-10°C. The shade is self-pollinating. The flowering period lasts 15-55 days. During the growing season, it is necessary to water every 10-12 days. Oil belonging to the olein-linole group, soybeans rich in protein are extracted from the grain. Grain, unripe (dumbul) pods are used for food. Soybean flour is used in the preparation of sausage products, milk, cottage cheese, confectionery, and other products. Straw, hay, hay, silage are fed to livestock.

Dietary foods for diabetes patients are prepared from soy beans. The main protein of soy - glycine is easily digested, dissolves well in water, turns into curd, and the protein is rich in irreplaceable amino acids.

Soybeans have four main functions in agriculture. These include meeting the population's need for vegetable protein, increasing grain production, increasing soil fertility, and providing livestock with fodder. This plant is one of the most important crops for increasing soil fertility.

Soybean contains 30-52% protein, 17-27% oil and 20% carbon water. The widespread distribution of soybeans on the earth is related to the quality of grain and protein. The amount and ratio of protein, oil and other important organic and mineral substances in the grain allows it to be used in various

sectors. Oil, margarine, cheese, milk, flour, confectionery products, and preserves are produced from soybeans.

Soybean oil makes up 40% of the vegetable oil produced on earth.

It is necessary to provide the population with nutritious food products, to solve the protein deficit, to increase the production of vegetable oil, to increase the quality of seeds and soil fertility. To solve these problems, it is necessary to create and improve new soybean varieties and cultivation technology.

At present, soybeans are planted as a secondary crop on 62 million hectares of land around the world. The decision of the Cabinet of Ministers of April 6, 2017 on soybean cultivation and measures to fully meet the population's need for soybean oil was adopted on the portal for discussion of regulatory legal documents in Uzbekistan this year. It is planned to gradually increase the areas where soybeans are planted in 2016, during this period, 92,266 hectares will be planted as a main crop, and 40,557 hectares will be planted as a secondary crop.

Among the leguminous crops grown in our country, soybean is the most valuable plant, after wheat, rice and corn. More than four hundred different products are made from soybean grain and protein. Its grain contains up to 45% protein and up to 25% vegetable oil, amino acids that are rare in livestock protein. Soybean protein produces environmentally friendly oil, egg powder containing lecithin, blood plasma, and high-quality lenses for glasses. In addition, woolen gauzes are produced. It is difficult to distinguish them from real woolen fabrics.

In animal husbandry, soy products are considered the most nutritious and high-quality feed, according to its protein content, 100 kg of soybean grain contains 134.8 nutritional units. This indicator is not found in any other cereal or leguminous crop. Its dry stem is also more nutritious than alfalfa hay.

Soybean meal, which remains after oil extraction in factories, contains 14 different amino acids, and these substances are widely used in poultry farming. Chicken eggs are rich in protein, high quality, and large in size. Soy protein is also a unique food for silkworms. In Japan, where silkworms are fed five times a year, diluted soy protein pastes are used. Initial work in this regard is also being carried out in our country. This plant is very important for increasing soil fertility. Soybeans absorb pure nitrogen from the air through their roots and enrich the soil. That is, it improves the composition of the soil and increases the activity of biological processes. In the fields where this plant is planted, the microflora of the soil is improved, a biological and ecological system is created in the soil.

Regular production of soy products in farms will create an opportunity to meet current food requirements and, at the same time, to meet the needs of future generations: new ecological technologies will be introduced, productivity will increase, human health will increase, and rural areas will be provided with safe, nutritious food. the social and economic condition of the farm will improve.

As a leguminous plant, soybean absorbs pure nitrogen from the air through its roots and enriches the soil with nitrogen. During the growth period, the plant leaves a certain amount of nitrogen both for itself and for the next plant. So, soy is a crop that improves the soil structure and renews the course of biological processes. The analysis showed that the soil humus was 0.65-0.72% before planting soybeans, and it was proved by the data of scientists that the amount of humus reaches 0.95-1.03% in autumn when soybeans are planted. Soybean is the most important crop in today's agriculture, it increases the biological fertility of the soil, after it 55-60 kg per soil. leaves pure nitrogen.

Also, the amount of total nitrogen and mobile phosphorus increases significantly. Total nitrogen increases from 0.051 to 0.119 by fall. The microflora of the soil is improved in the soybean fields, and a biological and ecological system is created in the soil. A favorable environment is created for worms, rhizobium bacteria and other beneficial organisms to live.

In 2021, soybeans were cultivated on an area of 1,800 hectares as the main crop in Bukhara province. According to the results of the observations, the yield of soybeans was 25-30 centners per hectare in the farms that followed the planting period and norms and agrotechnology of cultivation. But at the same time, many farms did not achieve sufficient productivity due to the fact that they planted this crop for the first time and did not follow the established agrotechnical rules.

Soy (Glicine hispida maxim.) is a heat-loving plant. The minimum temperature for grain germination is +8 C, and alternative conditions are 18-25 C. This plant can be planted in two periods. It is sown for the first time in spring, when the soil temperature is 12-14 C, or at the same time as corn, and for the second time, as a repeat crop, after cereal crops. The growing period of early varieties is 70-75 days, medium-ripening varieties ripen in 100-110 days, and late-ripening varieties in 135-140 days. Varieties are selected depending on when they are planted. Late ripening varieties yield 30-40 centners per hectare. Soybean varieties imported from the Krasnodar Territory and the USA are producing high yields in our conditions. Soybeans are grown as a repeat crop.

Early varieties require 120-150 C, and mid-ripening varieties require 180-210 C. The plant can reach a temperature of 140-150 C during repeated planting. It is possible to use the varieties "Olmos", "Zamin", "Oltintoj" for its repeated planting. 60-70 kg of seeds are used per hectare. Also, the number of bushes per hectare is 400-450 thousand for early-ripening varieties, 350-400 thousand for medium-ripening varieties, and 300-350 thousand for late-ripening varieties.

Among leguminous grain crops, soy occupies the first place in the world in terms of gross yield and cultivated area, and currently the area under soybean cultivation in the world is 120 million hectares.

When planting soybean as the main crop, it is necessary to know how to choose its varieties correctly. The growing period of early varieties is 70-75 days, medium-ripening varieties ripen in 100-110 days, and late-ripening varieties ripen in 135-140 days. Today, Shadow's Blessing (2015), Victoria (2015), Genetic-1 (2008), Gratsia (2015), Friendship (1984), Nafis (2012), Dream (2005) y.), such varieties as Altin 175, Zamin, Zara, Chara, Olmos, Bars, Arisoy, CK Optima Ru2 are being grown a lot.

In our experiment, the field for planting soybeans was irrigated, and when the soil was ripe, it was plowed to a depth of 22-25 cm, chiseled, harrowed, and prepared for planting with a trowel.

Soybeans absorb an average of 8.8 kg of nitrogen, 2.8 kg of phosphorus, and 3.6 kg of potassium to produce 1 centner of grain and corresponding stems and leaves. Based on this, phosphorus and potassium fertilizers were applied at the rate of 90 and 60 kg per hectare before plowing, nitrogen fertilizers at the rate of 170 kg per hectare were given as feeding during the tillering and flowering phases.

In early soybean varieties, the bud was formed in 3-4 joints from the bottom, and later with the growth of the plant, the buds were also formed in the upper part of the stem. Flowering began with the formation of 5-6 leaves in early ripening varieties. Flowering lasted 15-40 days, depending on the variety.

Flowering accompanied the rapid growth of the plant. This means that it is necessary to provide the plant with water and nutrients during this period. After flowering, the shade grew rapidly. The growth rate depended on the growing conditions and the characteristics of the variety.

During the growing season, the row spacing is worked 2-3 times, when organic and mineral fertilizers are given, the plant's demand for nutrients improves.

Another advantage of the soybean plant is that if it is planted as a repeated crop, it is possible to get two crops from the same land and enrich the soil with organic matter. At this time, 400-450 kg of nitrogen and 300-350 kg of vegetable oil are obtained from each additional hectare of land.

In oil factories of our republic, oil is extracted directly from soybeans. After extracting the oil, it can be isolated in the confectionery industry, to make chocolate candies, or directly used in the preparation of various cookies, bread and bakery products. It is also used in the preparation of sausage products. Soybean oil can compete with protein and fat in meat. Since it contains a lot of protein, soy flour added to bread and pastries will be 2-3 times more nutritious. 10-15 days after the beginning of flowering, pods begin to form in the lower tiers and begin to move upwards in the order of flowering. It is a critical period of soybean development during flowering and grain filling. During this period, water is required a lot. During the formation of seeds, they contain up to 40% water. During grain filling, the amount of water decreases sharply to 10-15%. Dry weight of seeds reaches maximum values after yellowing and 50% leaf shedding.

During the period of grain filling, growth of vegetative weight stops and the lower leaves begin to dry. It takes 40-60 days from flowering to pod maturity, and 11-20 days for seeds to mature. The vegetation period of soybean varieties lasted 80-95 days.

In conclusion, soybean cultivation solves a number of important issues, firstly, we enrich the soil with biological nitrogen, secondly, we provide the population with high-quality, ecologically clean vegetable oil, prepare various products, and create new jobs. Measures are being taken to organize the primary sowing of oilseeds and to use them as repeated crops. Our main goal is to provide the population with quality food products, to understand their usefulness, to organize the availability of fruits and vegetables throughout the year.

References:

1. Akmalovna, A. C. (2022, March). BIOLOGICAL PROPERTIES OF SOYBEAN. In E Conference Zone (pp. 90-94).

2. Akmalovna, A. C. (2022). Characteristics and advantages of soybean benefits in every way. Journal of Ethics and Diversity in International Communication, 1(8), 67-69.

3. Akmalovna, A. C. (2022). SOYA-OQSIL TANQISLIGINI HAL ETISHDA ENG MUHIMMANBALARDAN BIRI. BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI, 410-415.

4. Ergashovich, K. A., & Akmalovna, A. C. (2022). Soybean Cultivation Technology and Basics of Land Preparation for Planting. Eurasian Journal of Research, Development and Innovation, 7, 8-13.
5. G. R.XOLMURODOVA, G.N.TANGIROVA, S.T.JO‘RAEV “SOYA SELEKSIYASI VA URUG‘CHILIGI” o’quv qo’llanma Toshkent–2021
6. Х.Н.АТАБАЕВА, Н.С.УМАРОВА “СОЯ БИОЛОГИЯСИ” Т ОШКЕНТ-2020