

The Importance of Mineral Fertilizers in Cultivation of Soy Plants

*Boriyeva Dilorom Israilovna*¹

*Bahadirov Javahir Alijon*²

Abstract

A number of laws and decisions are being adopted in our republic regarding the development of grain and leguminous crops, increasing soil fertility, and obtaining high yields from crops. Planting soybeans from leguminous crops will provide natural nitrogenous substances to the poor soil. This is the only way to positively affect soil fertility by planting soybeans and provide food to the population.

Keywords: grain, cotton, corn, vegetables, sucking pests such as "Rhizoptin", "Rhizobium", "Bradirizobium", spider mite, aphid, spider mite.

¹ A teacher of Bukhara State University

² A student of Bukhara State University

Soybeans are grown in large quantities all over the world. Mineral and organic fertilizers increase the amount of nutrients in the soil, improve plant nutrition and ensure high-quality harvest. belongs to the group of crops.

Soybean crop is of great importance in fully meeting the needs of the population of our republic for food products, in particular, for vegetable oil, reducing the volume of imports, and strengthening the feed base of livestock and poultry. Soybean, considered a legume, is the best predecessor crop for all agricultural crops - winter grain, cotton, corn, vegetables and other crops.

It is advisable to select areas with good soil fertility and water supply, as well as place the crop based on the soil conditions, in order to grow an abundant and high-quality crop from soybeans. We recommend paying attention to the following.

Depending on the conditions, 90 kg of phosphorus and 60 kg of potash fertilizers are applied to the soybean field, 100%, the field is cleaned of weeds and roots, and leveled.

Due to the lack of bacteria adapted to soybeans in the soil of our republic, before planting, the seeds must be treated with one of the biofertilizers "Rhizoptin", "Rhizobium", "Bradirizobium" at the rate of 600-800 g/ha, otherwise soybean plant roots do not accumulate biological nitrogen.

Biofertilizers are sprinkled evenly over the seeds spread evenly in a place where sunlight does not fall,

and after mixing well, the top is covered with a cloth for a while. Treated seeds should be sown on the same day, otherwise beneficial bacteria will lose their power.

The optimal period for sowing soybeans is when the temperature of the soil in the 0-10 cm layer is around 12-14°C. If 60-80 kg of seeds are used for a row spacing of 60 or 70 cm, depending on the size, 350-400 thousand seedlings will be planted per hectare. It is optimal to sow the seed in a SPCH-6-8 pneumatic seeder to a depth of 4-5 cm.

In the main period, it is considered acceptable to complete the sowing of seeds at the end of March in the southern regions, from the first half of April in the central regions, and from the second ten days in the northern regions until the end of April.

It is important to collect seeds at the expense of natural moisture of the soil. If there is not enough moisture in the soil, it is necessary to lightly water the seed. Otherwise, the seeds in the planted areas will lose their fertility and the seedling thickness will be less than normal.

When the seedlings sprout and the first three leaves are formed, they are cultivated between the rows in order to ensure air exchange in the soil, improve heat and water permeability. In this case, the KRX-4 cultivator should be placed at a depth of at least 10-12 cm, and at a distance of 8-10 cm from the plants. During the growing season, depending on the soil conditions, it is worked with a cultivator at least 2-3 times between the rows.

In order to clean the field from weeds, weed and hoe are used. According to the soil conditions, it is advisable to chisel 1 time in the areas where seepage waters are located on the surface.

According to the data, in order to obtain a high and high-quality harvest from the soybean crop, 70-75 kg of nitrogen, 90 kg of phosphorus and 60 kg of potassium fertilizers should be given. The first nitrogen feeding should be carried out before the period of pruning. In this case, 30-35 kg/ha of nitrogen is applied to a depth of 12-14 cm with a cultivator fertilizer.

The second nitrogen feeding is carried out during the flowering-flowering period and is applied to a depth of 16-18 cm in the amount of 40 kg/ha. Late application of nitrogen fertilizers will delay the growth period of the crop.

Depending on the soil conditions, the first irrigation is carried out at the rate of 600-650 m³/ha during the budding-flowering stage, the second during the flowering-seeding period, and the third at the rate of 800-850 m³/ha during the grain filling period. Also, it is advisable to water every 15-20 days in order to ensure sufficient moisture during the ripening stage of soybeans.

Timely implementation of irrigation works ensures completeness of the grain. If there is a lack of moisture, the soybean grain will be small, which will lead to a sharp decrease in productivity.

Soybean crops are harmed by sucking pests such as spider mites, aphids, spider mites, and pests such as autumn mealybugs and bollworms. The combined use of biological and chemical control measures is effective in combating them.

It is advisable to distribute the golden eye image against sucking pests in the specified proportions and order. In the case of chemical control, it is necessary to use drugs with a complex effect.

"Mospilan" (0.15 l/ha), "Karbafof" (0.6-1.0 l/ha), "Deltafof" (1.0 l/ha), "Aplaud" (0.5 kg/ha, "Admiral" (0.5 l/ha), "Polytrin-K" (1.0 l/ha), "Calypso" (0.1 l/ha), "Vertmek" (0.5 l/ha), "Fufanon" (1.0 l/ha), "Koragen" (0.04-0.05 l/ha), "Avaunt" (0.4-0.45 l/ha) one of the drugs (following the specified standards) is sprayed with a OVX sprayer attached to a tractor with a consumption of 300 liters of water per hectare.

Soy has agrotechnical significance. Soybean roots contain rhizobia bacteria (*Rhizobium Japonica*), which are nitrogen-fixing organisms. As a leguminous crop, soybean enriches the soil with nitrogen, its roots accumulate an average of 70-100 kg of nitrogen per hectare per year. Biological nitrogen produced in this way is environmentally friendly, it does not have a toxic effect on the soil, wastewater, consumers, and it

does not accumulate in fruits like artificial nitrogen fertilizers. . After shading, the fertility of the soil increases, the soil softens, the field is cleared of weeds, and it can be a very good predecessor for many crops.

Growth and development. During the period of operation, the following periods are distinguished: germination, branching, budding, flowering and ripening. Weeding period. Soybean seeds begin to flourish when the water content reaches 90-150% of the weight of dry matter. After 2-3 days after budding, the rhizome breaks the ypyg shell and a root develops from it. Lateral roots and root hairs are formed in the bush as soon as the root begins to grow. Root hairs are very small and contain protein in the growing region. Roots grow until ypyg begins to form. The growth of the root complex depends on the physical properties of the soil, temperature, moisture and nutrients. The rate of growth of the root system is a sign of fertility. It is usually higher in quick-cooking varieties. The first buds are formed 7-10 days after the germination of the grass, after two weeks they are able to meet the nitrogen requirement of the plant. After the appearance of the bushy root, the hypocotyl begins to elongate and forms a ring that breaks the soil. As it rises to the surface of the soil, first the hypocotyl is visible, and then the urygpalla. Under the influence of sunlight, chlorophyll begins to form in them and they turn green. The first true trifoliolate leaf emerges when the epicotyl reaches the soil surface. First, a single leaf is formed, and then a triple leaf is formed. 3-4 days after the emergence of seeds, the leaves begin to be written. The germination period usually begins 8-10 days after sowing. The plant initially uses the nutrients of the seed. The initial development period of soybean is very slow. 20-25 days after germination, the height of the plant reaches 15-20 cm. The first three leaves appear 5-7 days after germination, the next ones are formed after 4-7 days.

Branching usually begins during the period of 3-5 complex leaf formation. In this process, the plant stem grows rapidly until flowering, then its growth slows down. At the same time, the folding of leaves also slows down. Lateral branches develop from the lower parts of the stem. But there are varieties with little branching or no branching. Pruning - begins sequentially with branching and passes simultaneously. The highest foliage of the plant is observed during the flowering period. The degree of foliage is 30-40%. During this period, the demand for moisture is extremely high. Flowering begins with the formation of 5-6 leaves in early-ripening varieties, that is, when side branches begin to develop, and in late-ripening varieties 30-70 days after germination. Flowering is "prolonged" and lasts 14-40 days, depending on the variety. Flowering is accompanied by rapid growth of the plant, which means that it is necessary to provide the plant with water and nutrients during this period. After flowering, the shade grows rapidly. Growth rate depends on growing conditions and characteristics of the variety. Scientists divide the shade into two groups: indeterminate and determinant groups. In indeterminate varieties, after flowering, the height of the plant increases 2-4 times. Flowers are formed in 4-5 joints and above. With the formation of flowers of the first period, many new joints and leaves are formed in the plant. In determinant varieties, the height of the plant increases imperceptibly after the beginning of flowering. The first flowers are formed in 8-10 joints, the stem begins to spread downwards and upwards. When the first flowers are formed, the buds in the axils of the leaves are almost formed. Such plants have multi-flowered and long inflorescences.

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Side panel

History

Sokhranennye

Flowering starts from the lower tier and begins to move up and to the side. The formation and ripening of pods also takes place in this order. Soybean is a self-pollinating plant, so natural hybrids in the cultivated area do not exceed 0.5-1%. The flowering period lasts 15-55 days. During this period, soybeans are more resistant to adverse conditions than other plants. Soybean flowers are small, white or pink in color. The calyxes are also hairy. The leaf area increases greatly during the transition to the reproductive period of

the shade and reaches 60 thousand m² /. In some medium-sized varieties, it reaches 115 thousand m² /. Soybeans produce twice as much leaf area as corn. But such a maximum leaf area does not participate in the formation of the crop, because there will not be enough cracks on the lower leaves. Pod formation. 10-15 days after the beginning of flowering, pods begin to form in the lower tiers and begin to move up to 8 in the order of flowering. The critical period of soybean development is during flowering and grain setting. During this period, water is required a lot. During the formation of urygs, 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. Ripe seeds do not lose their viability even under the influence of 0 0 temperature, because the seeds contain a large amount of oil and protein, and also have a hygroscopic thin seed coat. Seeds quickly lose their viability at high temperature and humidity. In a dry environment and at a low temperature, the germination of soybean seeds is preserved for up to 3.5 years. Fertilization is preserved longer in dark-colored seeds than in light-colored ones. During the period of grain filling, the growth of vegetative weight stops and the lower leaves begin to dry. It takes 40-60 days from flowering to pod ripening, and 11-20 days for seeds to ripen. The vegetation period of soybean varieties lasts 70-150 days

Reaction to heat. Soy heat-loving plant Depending on the quickness of the variety, soybean needs a useful temperature of 1700-32000 C during the growing season. Its minimum biological temperature is 10°C, but this indicator can change in some periods. The minimum temperature for seed germination is 6-7 0 C, the alternative is 20-250 C. A temperature of 12-140 C is necessary for lateral germination of grasses. Grass germinates in 6-7 days at 19-220 C, and in 12 days at 15-170 C. Grasses - can withstand frosts of 2-3 0 C. The highest demand for heat is observed during the formation of reproductive organs (21-23 0 C) and during flowering (20-250 C). During the flowering period, if the temperature drops below 170 C, flowering stops. Alternative temperature for normal development of soybean is around 18-25°C. Temperatures higher than 350 °C lead to shedding of buds and flowers. If the temperature drops below 14°C, the grain filling process stops. Nodules on soybean roots develop well at a temperature of 22-250 C. The high temperature in the second half of the working period increases the synthesis of oil, while the amount of carbohydrates decreases. Light and heat determine its growing regions.

When the temperature increased from 100 C to 330 C, the germination-flowering period was shortened from 45 to 21 days. Germination - the duration of the flowering period decreases with the late planting date. The germination-flowering period is drastically shortened when replanted. Therefore, in the conditions of Uzbekistan, when 9 soybean varieties are repeatedly planted on lands freed from winter wheat, it is observed that the period of validity is much shorter. The formation of flowers and fruits can be observed at 11.5-270 C, but the comfortable temperature should be 21-230 C, soil humidity should be 75-95%. Ripening occurs normally at a temperature of 14-160 C, slows down at 10-11 0 C, and strongly slows down at 8-9 0 C. If the temperature is low and the humidity is higher than the norm, the lawns and plants of the soybean plant will die, the reason for this is a violation of the air order, a lack of air.

For prevention against spider mite, spraying with sulfur at the rate of 30-40 kg per hectare, when necessary chemical preparations "Omayt" (1.5 l/ha), "Neron" (1.0-1.2 l/ha), Spraying one of the drugs "Vertmek" (0.2-0.3 l/ha), "Fufanon" (1.2 l/ha), "Deltafos" (1.5 l/ha) in the prescribed order gives good results.

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