



## USE OF INTEGRATED CONTROL MEASURES AGAINST SOYBEAN PESTS

Gaziyev Makhammadali Anorbayevich  
Candidate of Agricultural Sciences, Associate Professor

Sotvoldiyev Nozimjon Zikiryaevich  
Candidate of Engineering Sciences, Associate Professor

Kabilov Sahibjon Sherovich  
Candidate of Agricultural Sciences, Associate Professor  
Fergana State University

### Annotation

The article is more significant as it presents information and recommendations on the most common pests of soy, a leguminous crop, based on the researches on the measures to combat them.

**Keywords:** soybean, cotton, root, weather, pest, egg, crop,

### Introduction

Many types of agricultural crops, which are very necessary for the population and our industry, were not cultivated during the years of the cotton administration. Thanks to our independence, the farming system of our republic has changed radically. Many necessary decisions are being taken by our government for the development of every sector of agriculture. In particular, regarding the high yield of soybeans and other agricultural crops, according to the decision of the Cabinet of Ministers of the Republic of Uzbekistan No. 105 of February 10, 2018 "On measures to further increase the volume of soybean cultivation in the Republic" necessary tasks for reproduction have been determined. In addition, according to the decision No. 121 of March 4, 2021 "On effective use of existing land areas and rational placement of agricultural crops for the harvest of 2021", agricultural crops were planted on 3 million 148 thousand hectares of land. It occupies the fourth place among the cultivated crops in the world. Based on the data of recent years, at least 30-35% of the total harvest in the world is lost as a result of the damage caused by harmful insects, diseases and weeds. As a result of the successful development of the chemical industry, new types of chemicals (pesticides) against pests are being produced. Chemical substances are easy to use, quick-acting and highly effective, but they harm people, animals and nature. It is





important to take into account the resistance of insects to pesticides. Therefore, for many years in our country, the method of combined protection of plants is widely used to protect agricultural crops from pests. In this method, it is recommended to use chemical preparations only in the most necessary cases. One of the most effective methods of combating pests of agricultural crops is the creation by breeders of new soybean varieties resistant to harmful insects and diseases and introducing them for the use of our peasant farmers. In addition to the fact that it is economically beneficial to create varieties that are resistant to the current environmental problems, it is a factor that reduces the use of chemical preparations on soybean fields affected by pests and protects the environment from damage by chemicals. In agriculture, it is recommended to plant more plants such as beans, soybeans, and mung beans in the second crop system after cotton and winter wheat in the rotation of grain-legume crops. Plant protection is an important activity for obtaining high and quality crops from these crops.

Soybean plants are attacked by various insect pests overnight from germination to maturity. Below, we present scientific and field experience information about the occurrence, biology, reproduction, damage caused by the most common pests of soybeans and the use of combined control measures against them. According to our observations in the conditions of the Fergana Valley in 2020-2022, the most common pests in soybeans were: spider mites and aphids.

Spider mite - (*Tetranychus*) belongs to the spider mite family. The spider mite is a widespread insect, found in the countries of Europe, Asia, the USA, and Africa, except in the Central Asian republics. In the climate of Uzbekistan, it seriously damages more than 200 plant species. The spider mite begins to develop in early spring. When it leaves the village, it first develops in weeds. A spider mite is usually spread by the wind using its own thread. From spring to late autumn, it molts 18-22 times. It takes 8-12 days in summer for the development of one joint. According to Japanese experts, 1 spider mite can multiply up to 9 billion from spring to autumn. But more than 40% of spider mites that hatched from these eggs die as a result of natural factors. Being very resistant to high and low air temperatures, spiders are completely destroyed only when it drops below  $-29^{\circ}\text{C}$ . The spider mite is a persistent and serious pest of all types of agricultural crops, trees and shrubs. It disrupts the activity of plant leaf tissue and the process of photosynthesis. The spider mite settles on the back of the leaves and feeds by sucking the substances from it. On the upper side of the affected leaves, first, light-colored spots appear, and brown and reddish spots appear in severely affected areas. Severely damaged leaves dry up and fall off. Spider mite early detection and control measures determination of it requires high qualification from a specialist.





Because it is a microscopic pest that is difficult to see with the naked eye. If timely countermeasures are not applied, there is a great risk of severe damage to the soybean and damage to the crop. It is also necessary to take into account the existence of favorable conditions for pests to develop and cause damage in the climatic conditions of our republic. Taking into account the rapid development and reproduction of pests, it is necessary to conduct regular observations in the field of soybean crops so that they do not spread.

Control measures: To effectively protect plants from spider mite, a number of measures - activities and tools are used. These measures apply to all harmful organisms. These are organizational - economic, agrotechnical, prevention, selection (building resistant varieties), biological and chemical methods.

1. Advanced agronomic or preventive measures will limit successful wintering of spider mite and other pests. It is necessary to remove plant residues from the autumn field and plow the land. Giving chilled water in winter is also an important event in every direction.

In May-June, processing of field areas with OOO (0.5-1%) is considered one of the important measures. In this case, 55-60% efficiency against spider mite can be achieved. If 4 pieces of washing powder are added to 100 liters of working solution during the preparation of OOO, aphids will also be killed. When we used a stronger dose of the prepared OOO solution against weeds on the edges of the field, we saw good results, that is, as a result of the growth of weeds, all types of harmful insects and disease-causing agents were killed. The use of beneficial insects will be temporarily suspended prior to this event.

2. Usually, spider mites breed in plants on the edges of fields by forming nests. According to the current regulations, it is necessary to start processing when 60-80 spider mites are found on every 100 leaves.

3. Dusting colloidal sulfur on soybean leaves also gives good results when the air temperature rises. When sulfur prepartate is dusted, a "small explosion" occurs, sulfide anhydride gas is formed, and the spider mite is poisoned through the respiratory system and dies. 20-30 kg of sulfur is sprayed against spider mite. It is allowed to use chemical preparations in the years when the spider mite is strongly developed. For example: Ortius preparation with high efficiency is used in the amount of 750 g - 1 liter per hectare, Vertneks in the amount of 300-350 per hectare.

Plant sap (lice) - Aphidinea. Aphids are found in countries 600 north and 400 south latitude from the equator. Agricultural crops grown in Uzbekistan are mainly damaged by 3 types: alfalfa or acacia sap, cotton or polyz sap and large cotton sap. Soybeans can also be partially damaged by root sap. The saps of the plant suck the





saps of the leaves. As a result, reserves of carbohydrates in the stem and root are drastically reduced. Severely damaged leaves are twisted. Such plants grow very slowly. It is also difficult to determine the number of aphids in heavily damaged and untreated plants. Aphids multiply due to live births. When conditions are favorable, up to 150 larvae are born. Like other pests, aphids damage plants year by year and the number density of the pest in the plant is increasing. Depending on weather conditions, it gives birth up to 20-26 times. Aphids live for 3 - 20 days. Sernam grows rapidly in the air. When the air temperature exceeds 400 degrees, the sap will be completely destroyed. In this case, the high qualification of the specialist can greatly benefit the economy of the farm, that is, if the air temperature is taken into account in advance, chemical preparations against aphids are not used. Aphids, along with other pests, are resistant to some adverse environmental factors. Therefore, in January 2015, the movement of living aphids was observed at the growth points of roses. A soybean plant infected with aphids from the germination period can lose 15-20% of the yield. In early spring, depending on the expected weather conditions, 250-350 grams of Spiromectirin per hectare is used. This drug is used to reduce the number density of thrips.

Tobacco thrips - Thrips tab. Tobacco thrips is one of the most common pests in Central Asian republics. In addition to soybeans, it causes severe damage to many plants, including cotton, tobacco, onions, cabbage, greens and flowers. Thrips first develop in weeds in March, then move to agricultural crops. The female lives for a month and lays up to 100 eggs. A lichen hatched from an egg the calar moves along the leaf veins. Thrips settle on young leaves and growth points of plants and damage by stinging and sucking. Distinctive silvery spots are formed on the underside of the affected leaves, and deformed, twisted leaves appear from the damaged buds. When the growth point is severely damaged, the young leaves die and the plant grows by branching to the side. In the conditions of Uzbekistan, thrips breed seven or eight times.

Autumn nightshade (root worm) – *Agrotis segetum*. The root worm is found throughout Europe, except for the Far North, in Central Asia, behind the Caucasus, Afghanistan, Iran, North-West India and East Africa.

Its worms damage hundreds of crops belonging to 34 plant families. These include cotton, alfalfa, sugar beet, corn, grain, oilseeds and sugarcane crops. Autumn caterpillars pierce the germinating seed pods, and sometimes they also damage the above-ground part of the lawn. After the plant grows and the stem thickens, autumn caterpillars are unable to gnaw them. Therefore, caterpillars are better in late crops than in early crops. causes more damage. In late crops, it strongly damages root crops.





Rootworm is one of the most dangerous pests of soybeans, and in severely affected years, up to 10% of seedlings die. In rootworm feeding, it was believed that after soybeans develop 6 pinnae, the stem becomes coarse and cannot cause damage. According to our observations in the following years, it was observed that the nutrition of the root worm has changed.

It differs from other moths by having round and kidney-shaped dark spots on each wing. Another difference is that their eyes are blue. It grows 3 times in one season. For agricultural crops, the 1st and 3rd syllables are considered dangerous. Butterflies lay 500 or more eggs. The abundance and survival of butterflies depends on the quantity and quality of food during the caterpillar and butterfly period. Hatched caterpillars feed by gnawing on young grasses near the rhizomes and the seed pods that have not yet matured. After anthesis, "symmetrical holes" are formed in the leaves, and these holes indicate rootworm damage. is one of the main indicators. Worms molt 6 times during their lifetime, that is, they spend 6 years. It is easy to identify the rootworm in cultivated fields, the affected plant withers, digging around will reveal the rootworm. Entomologists can find rootworms on the surface of the soil if they check early. A disturbed worm does not try to escape, it becomes a cocoon. This pest hibernates in the soil in the adult larval stage; when there are very severe black frosts, young worms die. Worms in the arable layer of the soil turn into mushrooms in the second half of March-early April. After 2-3 weeks, adult butterflies emerge from these buds and lay eggs after feeding on flower nectar for a short time. Butterflies fly at night, and during the day they hide under bushes and among plants.

The third generation of the rootworm strongly damages autumn carrots and turnips, in addition to soybeans. In 2015, due to the increased number of rootworms, farmers could not harvest autumn vegetables. Even in 2022, the farmers of Rishton and Bagdad district could not harvest autumn vegetables.

Beneficial insects such as thrips and tachin flies parasitize the blueberry. Some birds, especially black crows, are very helpful in killing this pest.

Countermeasures. Cleaning the fields and the surrounding areas from weeds, eliminating weeds from the agrotechnical measures aimed at preventing the blackworm greatly reduces the possibility of the pest moving to the crop field; plowing the land in the fall, working between the crop rows, and watering will kill worms and fungi; if the crops are fertilized and watered in time, the plants will develop early and quickly, reaching the level where the blue beetle cannot damage them.

Preparation of poison bait (cheat bait) in the fight against blueworm. In this method, it is prepared by mixing a certain amount of toxic substances with nutrients that pests eat with pleasure. For example, rootworms feed very well on sawdust. Therefore, 1 kg



of chlorophos is thoroughly dissolved in 10 l of water per 100 kg of kunjara sawdust and soaked for 2 hours. As a result, rodents that have eaten poisonous food are poisoned through their intestines and die quickly. Since rootworms feed at night, it is recommended to use poison bait at night. Poisonous fodder scattered in the field is also late s does not dry out in hot air. Poisonous feed is used from 50 to 60 kg per 1 ha of soybean area.

Chlorophos, which has 80% of the active substance acting as an insect-acaricide, has not been used in pest control for many years. Chlorophos is a white alloy that dissolves well in water. Affects pests from outside and inside. 2.5-3 kg is used against rodent and sucking pests in cotton. People should not enter the place where this drug was used for 7 days. As a last resort, 300-400 grams of Ovriyo drug against soybean rootworm is used per hectare.

*Heliothis armigera*. It is one of the common pests in Central Asia. It is a worm that gnaws the soybean pods and causes damage, and is considered an omnivorous pest. In addition to soybeans, bollworm causes serious damage to crops of cotton, peas, tomatoes, corn, legumes, and plants belonging to various families. Harms spring and late sown varieties of soybeans. Butterflies lay eggs on the upper side of young leaves at the growing point of plants. Small worms emerge from eggs in 3-5 days, depending on weather conditions. Worms damage up to 20 crops. After being fed and reaching the age of 6, it falls 10-15 cm under the soil and turns into a mushroom. After 10-12 days, a butterfly will fly out of the mushroom. In this order, it gives birth four times a year. In the following years, the damage caused by the bollworm is increasing more and more. It is important to follow all agrotechnical measures in time so that the soybean plant grows strong, fruitful, resistant to diseases and pests.

Countermeasures. Predicting the quantity density of the pest in advance is one of the important tasks when determining control measures. In this case, pheromone traps or light traps are used to find out the duration of flight of caterpillars. As soon as the butterflies of each generation begin to fly, trichogramma is distributed, golden eyes are distributed to young worms that have hatched from eggs, and bracon is distributed to middle-aged and older worms. There cannot be a single day's delay in organizing these affairs. Chemical control measures are allowed when 8 - 10 pods are found per 100 soybean plants. If it is found that the number density of sucking and rodent pests has increased in one field, drugs with a complex effect are selected. Carrageenan, which is highly effective in field experiments, is used at the rate of 200-250 grams per hectare. This drug is also important because it does not have a negative impact on the environment, mainly on bees.





## REFERENCES

1. 1. Atabaeva X.N, Sattarov M.A, Idrisov X.A Sug'oriladigan maydonlarda mosh yetishtirishning intensiv texnologiyasi bo'yicha tavsiyanoma. Toshkent 2019
2. 2. Zoxidov.A.Z, Ismoilov M.N Moshning oziqli qiymati. T. "O'zbekiston". 1984
3. 3. Kogay.M.T Sug'oriladigan yerlarda don-dukkakli ekinlarni yetishtirish- "O'zbekiston" nashriyoti 1973
4. 4. "Agro bisnes" inform iqtisodiy-ijtimoiy jurnali. "Dukkakli ekinlar tuproq unumdorligini oshiradi". №07/90-2014y
5. Idrisov, X. A., & o'g'li soliyev, a. M. (2022, may). Sug 'oriladigan maydonlarda mosh (*Phaseolus aureus piper.*) Navlarining tavsifi. In international conferences on learning and teaching (vol. 1, no. 7, pp. 17-23).
6. Idrisov, X. A., Atabayeva, X. N. (2022, may). Loviya va mosh ekinlarining umumiy ahamiyati va biologik xususiyatlarini tahliliy o 'rganish. In international conferences on learning and teaching (vol. 1, no. 8, pp. 644-651).
- a. Xalima, A., Xusanjon, I., & Abdulvosid, S. (2022). O 'tloqi-botqoq tuproqlar sharoitida mosh (*Phaseolus aureus piper*) ning o 'sishi, rivojlanishi va don hosildorligi. *Research and education*, 1(2), 373-381.
- b. Xusanjon, I., & Abduxolik, K. (2022). Moshning yangi navlarini yaratishda seleksiya ko 'chatzorida o 'tkazilgan tadqiqotlar. *Research and education*, 1(4), 50-56.
- c. Abdujabborovich, I. X., Ozodbek, A., Nodirbek, X., & Abrorbek, a. (2022). Sug 'oriladigan maydonlarda mosh (*Phaseolus aureus Piper*) navlarining simbiotik faoliyatiga ekish muddati va me 'yorining ta'sirini o 'rganish. *Science and innovation*, 1(1), 615-624.
7. Abdujabborovich, I. X., o'gli, u. X. I., qizi, a. D. A., qizi, y. M. N., & ogli, m. A. A. (2022). Tipik bo'z tuproqlar sharoitida mosh (*Phaseolus aureus Piper*) navlarini tadqiq etish. *Science and innovation*, 1(d2), 160-165.
8. Abdujabborovich, i. X. (2022). Qozoqi anorning biologik xususiyatlari. *Models and methods for increasing the efficiency of innovative research*, 2(13), 396-400.
9. Idrisov, X. A., & o'g'li Soliyev, a. M. (2022, may). Sug 'oriladigan maydonlarda soya etishtirish texnologiyasini takomillashtirish. In international conferences on learning and teaching (vol. 1, no. 7, pp. 286-295).
10. Abdujabborovich, i. X., & Gofurovna, r. F. (2022, may). Soya (*Glycine hispida l*) ning bilogik xususiyatlari va tashqi muxit omillari. In e conference zone (pp. 1-5).
11. Abdujabborovich, i. X., & teshaboyev, a. (2022). Soyaning kolleksiya ko'chatzoridan samarali va maqsadli foydalanishning ilmiy axamiyati. *Science and innovation*, 1(d3), 286-290.





12. Abdujabborovich, i. X., & o'g'li, x. A. M. (2022). Sholi seleksiyasi bo 'yicha o 'tkazilgan tadqiqot natijalarini tahliliy o 'rganish. Science and innovation, 1(d3), 276-281.
13. Abdujabborovich, i. X., o'g, p. J. G. A., o'g'li, e. K. E., & o'g, d. O. N. M. (2022). Soyaning yangi navlarini yaratishda nav namunalaridan samarali va maqsadli foydalanishning ahamiyati. Science and innovation, 1(d3), 269-275.
14. Abdujabborovich, i. X., & Mirzamaksudavich, b. R. (2022). Soyaning yangi navlarini yaratish bo 'yicha o 'tkazilgan tadqiqotlar. Science and innovation, 1(1), 776-785.
15. Idrisov, x. A. (2022, june). Osiyo loviyasi-mosh (phaselus aureus piper.)—biologik xususiyatlari. In international conferences on learning and teaching (vol. 1, no. 9, pp. 144-148).
16. Abdujabborovich, i. X., o'gli, u. X. I., qizi, a. D. A., qizi, y. M. N., & ogli, m. A. A. (2022). Tipik bo'z tuproqlar sharoitida mosh (rhaseolus aireus piper) navlarini tadqiq etish. Science and innovation, 1(d2), 160-165.
17. Abdujabborovich, i. X., & teshaboyev, a. (2022). Soyaning kolleksiya ko'chatzoridan samarali va maqsadli foydalanishning ilmiy axamiyati. Science and innovation, 1(d3), 286-290.
18. Idrisov, x. A., & karimov, a. A. (2022, july). Mosh (phaselus aureus piper.) Dan yuqori hosil olishda agrotexnik omillarning ahamiyatimosh (phaselus aureus piper.) Dan yuqori hosil olishda agrotexnik omillarning ahamiyati. In international conferences on learning and teaching (vol. 1, no. 11, pp. 106-111).
19. Xusanjon, i., & abduxolik, k. (2022). Moshning yangi navlarini yaratishda seleksiya ko 'chatzorida o 'tkazilgan tadqiqotlar. Research and education, 1(4), 50-56.
20. Abdujabborovich, i. X., o'g, p. J. G. A., o'g'li, e. K. E., & o'g, d. O. N. M. (2022). Soyaning yangi navlarini yaratishda nav namunalaridan samarali va maqsadli foydalanishning ahamiyati. Science and innovation, 1(d3), 269-275.
21. Abdujabborovich, i. X., & mirzamaksudavich, b. R. (2022). Soyaning yangi navlarini yaratish bo 'yicha o 'tkazilgan tadqiqotlar. Science and innovation, 1(1), 776-785.
22. Idrisov, x. A., & o'g'li soliyev, a. M. (2022, may). Sug 'oriladigan maydonlarda mosh (phaselus aureus piper.) Navlarining tavsifi. In international conferences on learning and teaching (vol. 1, no. 7, pp. 17-23).
23. 31. Idrisov Xusanjon Abdujabborovich, Xalbaev Akbar Namozovich. (2022). Soyaning seleksiya ko'chatzoridagi nav namunalarini qimmatli-xo'jalik xususiyatlarini o'rganish. Models and methods in modern science, 1(12), 22–25.





<https://doi.org/10.5281/zenodo.7032183>.<https://doi.org/10.5281/zenodo.7032183>

24. 32. Isag'aliyev, M., Obidov, M., & Matholiqov, R. (2019). Morphogenetic and biogeochemical features of the medicinal capparidaceae spinosa. Scientific journal of the Fergana State University, 2(4), 46-49. <https://scholar.google.com/citations>
- a. 33. Matholiqov, R. Argic dasturidan foydalangan holda qishloq xo'jalik yerlarini tahliliy o'rganish. Oriental renaissance: Innovative, educational, natural and social sciences 2022 yil. <https://scholar.google.com/citations>
25. 34. Маматожиёв, Ш. И., Тожиаматов, Д. Д. У., Камолов, З. В. У., & Холиқов, М. Б. У. (2020). ФАКТОРЫ, ВЛИЯЮЩИЕ НА ПРОЦЕССЫ ХРАНЕНИЯ ЗЕРНА И НА ПОКАЗАТЕЛИ КАЧЕСТВА. Universum: технические науки, (12-4 (81)), 75-78.
26. Маматожиёв, Ш. И., Тожиаматов, Д. Д. У., Камолов, З. В. У., & Холиқов, М. Б. У. (2020). ПРЕИМУЩЕСТВА НОВОЙ СИСТЕМЫ ПРИ ПРИЕМКЕ ЗЕРНА. Universum: технические науки, (12-2 (81)), 96-99.
27. Davronov, Q. A., & Xoliqov, M. B. O' (2021). [The effect of grain moisture on grain germination during grain storage](#). ACADEMICIA: An International Multidisciplinary Research Journal (11-5), 418-421.
- Nazarovna, A. X., & Abdujabborovich, I. X. (2022). O 'TLOQI-BOTQOQ TUPROQLAR SHAROITIDA MOSH (Rhaseo1is aireis Piper) NING O 'SISHI, RIVOJLANISHI VA DON HOSILDORLIGI. Research and education, 1(2), 373-381.
28. Идрисов, Х. А., & Мадалова, М. (2022). МАША (PHASELUS AUREUS PIPER.) И АГРОТЕХНИКА ВОЗДЕЛЫВАНИЯ. Eurasian Journal of Medical and Natural Sciences, 2(11), 77-86. извлечено от <https://in-academy.uz/index.php/EJMNS/article/view/4399>
- Идрисов, Х. А., & Мадалова, М. (2022). МАША (PHASELUS AUREUS PIPER.) И АГРОТЕХНИКА ВОЗДЕЛЫВАНИЯ. Eurasian Journal of Medical and Natural Sciences, 2(11), 77-86. извлечено от <https://in-academy.uz/index.php/EJMNS/article/view/4399>
- Idrisov, X. A., Qashqaboeva, C. L. T. L., & Xalbaev, A. N. (2022). SOYANING NAZORAT KO'CHATZORIDAGI NAV NAMUNALARINI QIMMATLI-XO'JALIK XUSUSIYATLARINI TAHLILY ORGANISH. Results of National Scientific Research International Journal, 1(5), 134-139.
- Idrisov, X. (2022). MOSH: RESEARCH, EXPERIENCE AND RESULTS. Science and Innovation, 1(7), 182-186.



32. Idrisov, X., Matxoliqov, R. Z., & Xoliqov, M. (2022). KUZGI BUG 'DOYDAN KEYIN EKILGAN MOSH NAVLARINING SIMBIOTIK FAOLIYATINI O'RGANISH. O'rta Osiyo ta'lim va innovatsiyalar jurnali, 1(2), 51-56.
33. Ibragimov, O. O., & Idrisov, X. A. (2022, October). OLMA NAVLARINI NAV TAVSIFINI O 'RGANISH ASOSIDA TAXLIL ETISH. In INTERNATIONAL CONFERENCES (Vol. 1, No. 4, pp. 20-27).
34. Atabaeva, X. N., & Abdujabborovich, I. X. (2022). MOSH NAVLARI BARG YUZASI RIVOJLANISHIGA AGROTEXNIK OMILLARNING TA'SIRI. Science and innovation, (Special Issue), 540-544.
35. Idrisov, X. (2022). MOSH: TADQIQOT, TAJRIBA VA NATIJA. Science and innovation, 1(D7), 182-186.
36. Idrisov, X. (2022). EKISH MUDDATLARI VA ME'YORLARINI MOSH (Rhaseo1is aireis Riper) NAVLARI POYA BALANDLIGI VA HOSILDORLIGA TA'SIRINI O 'RGANISH. Science and innovation, 1(D7), 176-181.
37. Abdujabborovich, I. X., Maxliyoxon, A., Muslima, A., & Gavhanso, A. (2022, November). TOSHKENT VILOYATI O 'TLOQI BOTQOQ TUPROQLARI SHAROITIDA SOYA (GLYCINE HISPIDA L) NING KOLLEKSIYA KO 'CHATZORIDA O 'TKAZILGAN TADQIQOT. In Proceedings of International Conference on Modern Science and Scientific Studies (Vol. 1, No. 2, pp. 98-104).
38. Abdujabborovich, I. X., & Teshaboyev, A. (2022). UDK: 633.853. 52 SOYANING YANGI ISTIQBOLLI NAVLARINI YARATISH NATIJALARINI TAXLILY O'RGANISH. Новости образования: исследование в XXI веке, 1(3), 8-14.
39. Idrisov, H., & Madalova, M. (2022). ANALYTICAL STUDY OF THE GROWTH AND DEVELOPMENT OF A VARIETY OF MUNG BEAN (RHASEO1IS AIREIS PIPER). Eurasian Journal of Medical and Natural Sciences, 2(11), 97-101.
40. Idrisov, X., & Xalbaev, A. (2022). SOYANING SELEKSIYA KO'CHATZORIDAGI NAV NAMUNALARINI QIMMATLI-XO'JALIK XUSUSIYATLARINI O'RGANISH. Models and methods in modern science, 1(12), 22-25.
41. Nazarovna, A. X., & Abdujabborovich, I. X. (2022). O 'TLOQI-BOTQOQ TUPROQLAR SHAROITIDA MOSH (Rhaseo1is aireis Piper) NING O 'SISHI, RIVOJLANISHI VA DON HOSILDORLIGI. Research and education, 1(2), 373-381.