THE HARMFUL ENTOMOFAUNA OF THE AMARANTH PLANT IN UZBEKISTAN

Saidganieva Shahodatxon Talatbek qizi

Junior researcher of the Innovation Center for Forestry Development

Abstract: *In recent years, much attention has been paid in Uzbekistan to the cultivation and organization of reproduction of medicinal plants. The amaranth plant, due to its medicinal properties, can be used in various industries, as well as in agriculture. Currently, measures are being taken to popularize this plant throughout the Republic and establish its reproduction. For this reason, the study of the biology and harm of the harmful entomofauna of the amaranth plant, as well as the development of a system to combat them, are the main goal of our scientific research.*

Keywords: *Amaranth, the degree of occurrence of pests, harm, the effectiveness of a microbiological preparation*

The amaranth plant is considered a valuable plant of the XXI century. The high level of nutrient content is recognized by UN experts and scientists, and amaranth is a promising crop that is among the plants that make up the main source of nutrition for the world's population. Currently, amaranth is widely grown in India and China, as well as in the countries of Southeast Asia, Africa and Europe”[1].Also, according to the FAO, ”it is widely cultivated in the Andean region of South America, namely in Argentina, Peru, Bolivia, India and China"[2].

The most valuable and healing part of amaranth -is its seeds. 100 grams of amaranth seeds contain 370 calories and contain 7 grams of lipids, 4 mg of sodium, 508 mg of potassium, 65 mg of carbohydrates, 1.7 mg of sugar, 14 mg of protein, 159 mg of calcium, 4.2 mg of vitamin C, 7.6 mg of iron, 248 mg of magnesium, 0.6 mg of vitamin B6, and other vitamins found. Amaranth oil does not contain cholesterol [3].

Amaranth seeds are used to treat a number of diseases, including: - respiratory diseases (bronchitis, laryngitis, pleurisy, pneumonia); - endocrine correction (anemia, vitamin deficiency, obesity, diabetes mellitus, goiter);-diseases of bones and blood vessels (osteochondrosis, arthrosis, arthritis); - oncological diseases; - diseases in young children it is used to increase breast milk in women, treat insomnia and other sexual disorders.With proper care, an average of up to 30 blue stems and 25-45 quintals of grain can be obtained from 1 ha. To obtain a blue mass, amaranth is harvested during the flowering period and seed wax. Because during this period, the stem and leaves of the plant will be rich in vitamins [4].

Today, one of the urgent problems is the development of less environmentally harmful measures to combat not only pests and diseases found in areas of amaranth cultivation, but also pests of other crops.

In 2021-2023, our field experiments were conducted at the Andijan Experimental Station of the Scientific Research Institute of Vegetable Crops and Potatoes of the Andijan district of the Andijan region, as well as in the field fields of the Andijan Experimental station and the Feruz farm Marhamat district. Identification of species of harmful entomofauna of the amaranth plant in the method of G.Ya.Bey-Bienko monitoring and accounting of pests based on the method of V.F.Palia, compilation of pest phenologies was carried out using the Dobrovolsky method.

In the course of our scientific research in 2021-2023, 1 main class, 5 orders, 13 families, 19 species of pests of the amaranth plant were identified, among which dominant species were identified, and the features of the development, distribution and damage of dominant species were studied.

When collecting samples, methods of entomological capture, manual collection, collection of samples of affected plants and soil digging were used to determine the type of amaranth pests. The determination of the number of pests and the collection of their samples was carried out in the spring and summer period on the basis of a directional observational technique. When calculating the average number of amaranth

pests in the cultivated area, a total of 160 plants were observed in 10 of the 16 places along the diagonal of the field. Of all the samples taken, the total number of pests was calculated by development period and an average number was found for 10 samples.

As a result of observations conducted in the Andijan region in 2021-2023, the species composition of pests found on the amaranth plant was studied. Based on the results of the observations, the main dominant species among the pests were identified and measures were taken to combat them.

Table.1

Species composition, occurrence, degree of damage and dominant species of amaranth pests (in the Andijan region)

№	The name of the pests	The level of dating*
1	Black bean aphid, *(Aphis fabae)*	+
2	Cowpea aphid *(Aphis craccivora Koch)*	+
3	(*Lixus (Phillixus) subtilis*	+++
4	*A.punctiventris Germ*	+++
5	Asproparthenis obsoletefasciata	++
6	Cereal leaf beetle (Lema melonopus)	++
7	*Potosia marginicollis*	+
8	*Oxythyrea cinctella*	+
9	*Heliothis armigera*	+++
10	*Heteracris pterosticha*	+
11	*Dociostaurus locust*	+++
12	*Halyomorpha halys*	++
13	*Adelphocoris lineolatus*	+
14	*Lygus pratensis*	++
15	Eurygaster integriceps	+

16	*Chaetocnema concinna Marsh.*	++
17	*Loxostege sticticalis*	++
18	*Tettigonia viridissima*	+
19	*Gryllus campestris*	+

*** Note: +++ a lot, ++ on average, + rarely.**

In our scientific studies conducted in 2021-2023, it was shown that such pests as beetroot weevil (L.subtilis), cotton shovel (H.armigera), Moroccan locust (D. maroccanus) cause serious damage to the agrobiocenosis of amaranth [5],[6].

In the Marhamat district of the Andijan region, microbiological preparations were treated against a complex of locust forms that do not form a swarm on the amaranth plant (in which several species of locusts were found simultaneously). But, considering that regulations have not been developed for the use in various consumption rates against a complex of locusts that do not form a swarm, resistant to drugs, we conducted experiments to obtain the results of testing our studies on a complex of locusts of this form.

In addition, one of the most important factors is the high cost of microbiological biologics in our experiments, and the main goal was to develop regulations for the use of this remedy against locusts, a harmful species that does not form a swarm found on the amaranth plant.

Conclusions. Based on the results of research conducted in the Andijan region, the main dominant pests of the amaranth plant were identified. Among them, the beet stem beetle weevil (L. subtilis), cotton bollworm (H. armigera) and the pest locust complex were noted as the main dominant pests. In our research, the phenology and damage of these pests were studied. Pests were fought with microbiological preparations when the economic damage exceeded the criterion

REFERENCES

1. Кононков П. Ф., Сергеева В. А. Амарант - ценная овощная и кормовая культура многопланового использования // АВУ. 2011. №4.

2. https://www.fao.org/traditional-crops/amaranth

3. Ш.Эргашев амарант – открытие XXI века. Газета Народное слово. 10.07.2017 г . –С.4.

4.Национальная академия наук. Амарант: современные перспективы древней культуры. Вашингтон, округ Колумбия: Национальная академия наук; 1984 г

5.Tufliyev N., Saidganiyeva Sh.T. Amarant zararkunandalarining tarqalishi va uchrash darajasi. // Agrokimyo himoya va o‘simliklar karantini jurnali. –Toshkent, 2023. -№4. -B.40-41.

6.Saidganiyeva Sh., Tufliyev N. Andijon viloyati sharoitida amarant o‘simligi zararkunandalarining tarqalish darajasi .// O‘zbekiston qishloq va suv xo‘jaligi jurnali. - Toshkent, 2023. – №10. –B.44-45.

7. Saidganieva, S. T. Q. (2021). Andijon viloyati sharoitida dorivor amarant o’simligini yetishtirish texnologiyasi. Scienceand Education, 2(5), 111-115.

8. Саидганиева Ш.Т., Туфлиев Н.Х “Виды основных вредителей растения амарант и степень их встречаемости” международная научно-практическая конференция по теме “Инновационные технологии защиты растений в продуктовой безопасности” 2021 год (2) с 240.

9. Nodirbek, T., & Kizi, S. S. T. (2021). Cultivation of the medicinal plant amaranth and its entomofauna. Universum: химия и биология, (11- 2 (89)), 70- 73.

10. Саидганиева, Ш. Т., & Туфлиев, Н. Х. (2021). Биологические свойства растения амарант и его значение в сельском хозяйстве. *Вестник аграрной науки*, *1*, 85.

11. САИДГАНИЕВА, Ш. АКТУАЛЬНЫЕ ТРЕНДЫ В НАУКЕ И ОБРАЗОВАНИИ. Наука и Просвещение (ИП Гуляев ГЮ) КОНФЕРЕНЦИЯ: АКТУАЛЬНЫЕ ТРЕНДЫ В НАУКЕ И ОБРАЗОВАНИИ Пенза, 08 января 2024 года Организаторы: Наука и Просвещение (ИП Гуляев ГЮ).