SPECIES COMPOSITION OF THE MAIN SUCKING PESTS OF GREENHOUSE VEGETABLE CROPS

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Annotatsiya. Mazkur maqolada pamidor sabzavot o'simligiga zarar keltiruvchi so'ruvchi zararkunandalaridan oqqanot, trips, o'rgimchakkana va o'simlik shiralarining tur-tarkibi tarqalishi hamda yetkazadigan zararining adabiyotlar tahlili haqida malumotlar keltirilgan bo'lib, ushbu so'ruvchi zararkunandalar sabzavot ekinlarining hosili sifati va hosildorlikni tushirib yuboradi.

Kalit so'zlar: Issiqxona, sabzavot, tu-tarkibi, zararkunanda, oqqanot, trips, o'rgimchakkana, o'simlik shiralari.

Аннотация. В данной статье приведены сведения о распространении сосущих вредителей белокрылки, трипса, паутинного клеща и тли растений, наносящих вред овощным растениям томата, а также об анализе литературы о вреде, причиняемом этими сосущими вредителями, которые снижают качество урожая и урожайность овощных культур.

Ключевые слова: Теплица, овощи, состав, вредитель, белокрылка, трипс, паутинный клещ, соки растений.

Abstract. This article provides information on the distribution of sucking pests such as the whitefly, thrips, the arachnid mite, and plant aphids, which cause damage to vegetable tomato plants, as well as on the analysis of literature on the damage caused by these sucking pests, which reduce the quality and yield of vegetable crops.

Key words: Greenhouse, vegetables, composition, pest, whitefly, thrips, spider mite, plant sap.

Introduction. During the transition of the Republic of Uzbekistan to a market-oriented economy, it has become essential to ensure that all agricultural products meet the quality standards required by the international market. Accordingly, comprehensive reforms are being implemented in all sectors of agriculture, with particular emphasis on increasing the production of high-quality agricultural products.

Literature Review. Ensuring sufficient production and consumption of

agricultural products per capita and bringing Uzbekistan to the level of the world's leading agricultural countries constitute one of the fundamental objectives of the country's agrarian policy. Among vegetable crops cultivated in Uzbekistan, cucumber (Cucumis sativus L.) occupies an important place. According to specialists in public health and hygiene, the annual per capita consumption of cucumbers should range from 25 to 35 kg. However, the current production level is only 15–18 kg per capita, which is 10–17 kg below the recommended consumption standard (Oblokulov D.D., 2006).

Greenhouses play a significant role in providing the population with fresh vegetables throughout the year rather than only during the growing season, thereby ensuring a continuous supply of vitamin-rich food products (Kimsanbaev X.X., Kadirxodjaev A., Zuev V., Sulaymonov B.A., 2006). With the introduction of new agricultural management systems, collective farms have been transformed into private farms, and the greenhouse cultivation area has expanded steadily. Currently, greenhouse production occupies more than 150 thousand hectares (Azimov B.J., Hakimov R.A., 2003).

One of the most important factors affecting crop productivity is the use of high-yielding varieties that are resistant to diseases, insect pests, and adverse environmental conditions, combined with the application of advanced cultivation technologies (Abbosov A., Qoraboev M., 2007).

The emergence of the two-spotted spider mite (Tetranychus urticae Koch) from overwintering depends largely on spring temperature conditions. According to Tibilova A.A. (1935), spider mites become active when the air temperature reaches at least 12°C. However, other researchers have reported that the lower developmental threshold is approximately 10°C (Vasser R.E., 1938). After emerging from overwintering, female mites begin laying eggs within 7–8 days. Eggs are mainly deposited on broad-leaved plants, although they may also be laid on the soil surface if suitable host plants are unavailable. Initially, spider mites develop on weeds and later migrate to cultivated crops (Kosobuskiy M.I., 1959; Yakhontov V.V., 1953).

Timely implementation of pest management measures against harmful phytophagous organisms is essential for preserving crop yield and quality. In protected cultivation systems, cucumbers are attacked by several economically important pest species, including the two-spotted spider mite (Tetranychus urticae Koch), the greenhouse whitefly (Trialeurodes vaporariorum Westwood), aphids (Family: Aphididae), and plant-parasitic nematodes. These pests significantly reduce both the quantity and quality of greenhouse vegetable

production.

Based on their feeding behavior, greenhouse insect pests can generally be divided into two groups. The first group consists of sucking pests, which feed by extracting plant sap, thereby weakening plant growth, reducing productivity, and deteriorating crop quality. In addition, these pests serve as vectors of numerous infectious plant diseases, particularly viral pathogens. Honeydew secreted by certain pests, such as aphids and whiteflies, contaminates leaves and other plant organs, creating favorable conditions for the development of saprophytic fungi. This contamination interferes with photosynthesis and negatively affects normal plant physiological processes.

Research Methodology.According to the scientific literature published by Professor Sh.T. Khojayev (2004), the economic threshold level (ETL) for aphids and thrips was determined jointly. The economic threshold was reported to be 4–5% during the seedling stage of cotton, 6–7% during the budding stage, and 10–12% during the harvesting period. In our opinion, considering that these two insect pests cause different types of damage to plants, it would be more appropriate to establish separate economic threshold levels for each pest species. Furthermore, the threshold should be expressed based on the number of individuals per plant rather than the percentage of infestation. The author also provided a detailed description of thrips as an economically important pest.

Results and Discussion. Thrips possess seven-segmented antennae. The head is wider than it is long, while the pronotum is approximately 1.4 times shorter than its width. Their wings are fringed with long cilia along the margins, and the forewings have four setae located at the apical part of the anterior longitudinal vein (Yakhontov, 1950).

The larvae are pale yellow in color, lighter than adults, wingless, and females lack an ovipositor. Their compound eyes consist of three to four facets, and the antennae are composed of six segments (Yakhontov, 1950; Pavlov, 1950).

Female thrips are generally more abundant than males. They preferentially oviposit within leaf tissues, particularly on young leaves, where large numbers of eggs are deposited. Specialists should distinguish the tobacco thrips from the beneficial predatory mite-feeding thrips. These species differ primarily in coloration: tobacco thrips are light yellow, whereas the predatory thrips are dark-colored with light transverse stripes. Predatory thrips are highly active and usually appear later than tobacco thrips in habitats infested with spider mites (Alimukhamedov & Adashkevich, 1990).

Conclusion and Recommendations. Whiteflies, thrips, spider mites, and aphids are among the major sucking pests of greenhouse vegetable crops. To minimize their harmful effects, timely and integrated pest management practices should be implemented. These include continuous monitoring of infested areas from early spring until late autumn, proper implementation of organizational and agronomic measures, high-quality cultivation practices, seed treatment before sowing, timely inter-row cultivation, proper autumn plowing, removal of crop residues after harvest, and effective control of weeds both within and around cultivated fields. The integration of these measures contributes significantly to reducing pest populations and ensuring sustainable greenhouse vegetable production.

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