ISSN NO: 2771-8840
Date of Publication: 30-09-2023

Protecting Lemon From Juices

Khakimov Aziz Abduvokhitovich
Is an independent researcher
Research Institute of Plant Quarantine and Protection

Abstract. In the article, 2 classes of 25 types of pests belonging to different families have been identified on citrus plants in the conditions of the Republic. Among them, among the dominant species that cause the main damage: mites (Acariphormes) belonging to the family of spider mites (Tetranychidae) and representatives of the class of insects are found to be greenhouse and cotton aphids, acacia, peach and polysis aphids

Key words. Citrus, lemon, insect, pest, spider mite, aphids, aphids, greenhouse.

Introduction. The role and importance of the agricultural sector in ensuring the food security of the world population is increasing day by day. In particular, it is an urgent issue to use the available resources and opportunities in our country, to provide the population with guaranteed agricultural products, to further increase productivity and interest, to introduce scientific achievements and modern approaches to the field. Controlling the number of pests that damage citrus crops in agrobiocenosis of fruit orchards is one of the urgent problems of today. Accordingly, the distribution, damage, bioecological characteristics of citrus pests, the effectiveness of entomophages in managing their quantity, and the improvement of the integrated pest control system are of great scientific and practical importance.

In the development of Uzbekistan, the demand for food, especially for fruits and processed products, their type and quality is also increasing with the increasing population. It is no exaggeration to say that the demand for citrus fruits and their processed products in particular is at the forefront of popularity among all other fruits. Juice made from citrus fruits has become one of the daily products of residents of many foreign countries. Such a wide spread of citrus fruits is characterized by their incomparable taste, vitamin richness, aroma, ease of processing, storage, transportation, the fact that cultivation and reproduction are not so complicated, and a number of similar advantages.

Bringing a sufficient amount of agricultural products per capita to the ranks of the most developed countries in terms of production and consumption is the basis of the agrarian policy carried out in the Republic.

Horticulture is one of the leading branches of agriculture in the Republic of Uzbekistan. The yellow and sweet-sugar fruits grown by the entrepreneurs are not only in our country, but also in the world. Citrus fruits (lemon, orange, tangerine) have become very popular in recent years, and the cultivated areas are expanding [9, 10].

Lemons, oranges, tangerines, grapefruits, grapefruits, 20 types of citrus fruits are grown in Uzbekistan. Pests of citrus crops are not well studied in Uzbekistan [7, 8, 10].

Today, protection from pests and diseases is one of the urgent problems in the cultivation of citrus fruits. The gnawing and sucking pests cause great damage to the lemon plant, and the influence of representatives of the aphid generation among them is very great.

Aphids belong to the Aphidinea family. About 800 of its species have been identified in the territory of MDX. Among them, dangerous species are found in crops of protected areas. They damage the young plant and delay its development, the affected tissues are deformed, the leaves twist, turn yellow, and the branches become crooked. They prefer to feed on the young leaves at the growing point of the plant. They feed on plant sap and cause a change in the shape of the leaf plate and its partial or complete death. Due to the liquid they secrete, it is a favorable nutrient medium for the development of fungi [2, 7, 8].

Saprophytic fungi settle in the place where aphids stick, the assimilation property of the leaf apparatus decreases, the plant weakens, stops growing, flowers dry up, and the crop does not develop [2, 4, 5].

More than 20 species of aphids have been reported to damage small greenhouses, botanical gardens, nurseries. The dangerously common of them are polisis (A.gossypii), peach (M.persicae), common (A.solani) and large (M.euphorbiae) citrus, spotted orangery (A.circumflexus), green (M. rosae) rose nectar. In episodic or

ISSN NO: 2771-8840
Date of Publication: 30-09-2023

individual crops, alfalfa sap (A.craccivora), leguminous sap (A.fabae), mulberry (C.fragaefolii), red head of hawthorn (D.apiifolia), bulbous tulips (D.tulipae), chrysanthemum (M.sandorni), house aphid (M. porulacae), onion aphid (M. ascalonicus), pus (R. numhaeae) and other species are pests [3, 4].

Research methods. The research conducted in 2018-2022 on the study of the development of pests in the regions where citrus crops are grown in our republic, the distribution of the species of representatives of the Aphididae family and the dominant species causing the main damage, the level of damage and bioecological characteristics and the development of UHQT against them are general entomology and agriculture. performed using all methods used in entomology.

Acacia sap, greenhouse mite, citrus thrips, and rust mite were taken as the main subjects of the researches, and the methods [1, 2, 6,] were used as the main objects.

Sampling methods used to identify the type of citrus pest were entomological trapping, hand picking, sampling of infected plants, and soil digging. Determining the number of pests and collecting their samples was carried out throughout the year on the basis of the directional-observation method. In citrus crops, 10 plants from 10 locations were observed diagonally. The total number of pests was calculated from all the samples, and the average number per 100 plants was found.

Phenological observations were carried out in the field, relating the development periods of the insects. By means of phenological observations, taking into account the average air temperature and relative humidity, the periods of appearance and development of insects in citrus are determined, calculating when the beginning of certain periods of pests are observed in 15-20%, or 50-60%, and 80% or more of their completion. went

In order to study the species composition of the pests found in citrus plants in the conditions of the republic, we conducted directional observations in greenhouses and crop fields with citrus plants in the Tashkent and Fergana regions of the Republic during 2018-2021.

In order to study the species composition of the pests found in citrus plants in the conditions of the republic, during 2018-2021, we conducted directional observations of citrus crops grown in greenhouses and pits in Tashkent, Samarkand, Fergana, Namangan, Andijan, Khorezm regions and the Republic of Karakalpakstan. In the conducted research, it became known that 25 types of pests belonging to 2 classes were recorded as a result of the analysis of the data collected during observations of citrus crops in the conditions of our Republic (Table 1). Most of them, 23 species belong to the class of insects (Insecta), and the remaining 2 species belong to the class of spiders (Arachnoidea) [4, 7, 8].

In addition to certain difficulties in the cultivation of citrus plants in our climate, their damage by various harmful organisms in different seasons of the year was confirmed in our observations.

In our directional observations conducted in 2018-2022, it was found that 3 species of aphids can be found in lemon trees grown in greenhouses. We studied the systematics of aphids by scientists of the Zoological Institute of the Academy of Sciences and the Scientific Research Institute of Plant Protection of the collected pests.

Table 1

Species composition, occurrence, degree of damage and dominant species of citrus pests

(2018-2022 years)

№	The name of the pest	Meeting
1.	*Paratetranychus citri* (Mc.G)	+ +
2.	*Aculops licopersici* (Massee)	+
3.	*Aphis gossypii* (Glov.)	+ + +
4.	*Aphis craccivora* (Koch.)	+ + +
5.	*Myzodes persicae* (Sulz)	+ + +
6.	*Empoasca meridian* (Zachv)	+ +
7.	*Dialeurodes citri* (Ashmead)	+ +
8.	*Trialeurodes vaporariorum* (Westw.)	+ +
9.	*Bemisia tabaci* (Genn.)	+ +
10.	*Thrips tabaci* (Lind)	+
11.	*Agriotes meticulosus* (Cond)	+
12.	*Clon cerambycinus* (Sem.)	+

ISSN NO: 2771-8840
Date of Publication: 30-09-2023

13.	*Melolontha melolontha* (*M. hypocastani*)	+
14.	*Calliptamus italicus* (L.)	+
15.	*Tettigonia viridissima* (L.)	+
16.	*Phytomyza* (sp.)	+
17.	*Phyllocnistis citrella* (Stainton)	+ +
18.	*Gryllotalpa gryllotalpa* (L.)	+
19.	*Melanogryllus desertus* (Pall)	+
20.	*Agrotis segetum* (Den. et Schiff)	+
21.	*Agrotis exlamationis* (Den. et Schiff)	+
22.	*Lepidosaphes beckii*	+ +
23.	*Diaspidiotus Comst*	+ +
24.	*Parthenolekanium corni*	+ +
25.	*Pseudococcidae sp.*	+ +

+++ – very common, ++ – not common, + – rare.

In lemon plants, the family of aphids (Homoptera) belongs to the Aphididae family: acacia aphid - Aphis craccivora Koch., apple aphid - Aphis gossypii Glow., peach aphid - Myzodes persicae Sulz. is widely considered to be the dominant species.

It was found that in 2018-2022, the greenhouse spider mite spread in all greenhouses and harmed the productivity of the plant and its quality indicators. In 2019-2020, acacia sap was found in Tashkent region and Navoi region more than in 2018. In 2019-2022, the meeting of peach and orange juice was also observed in these regions. In 2020, a stronger spread of peach juice was noted in Tashkent, Kashkadarya, Bukhara and Samarkand regions. Polyz sap, acacia sap is found in citrus plants planted in Surkhandarya and Kashkadarya regions, mainly lemons, but it was confirmed that their damage is not high.

In the greenhouses of Jizzakh and Syrdarya regions, in 2019-2022, the development of aphids was strong in September-October and April-May, and a strong development of aphids was observed after opening the films in the greenhouse.

According to the results of the research for 2018-2022, in lemon crops grown in private greenhouses of the Tashkent region, in addition to aphids, spider mite, greenhouse spider mite - Trialeurodes vaporariorum Westw., citrus spider mite - Dialeurodes citri Ashmead, red citrus mite - Paratetranychus citri Mc.G, citrus pore forming moth - Phyllocnistis citrella Stainton, comma-shaped shield - Lepidosaphes beckii, California shield - Diaspidiotus Comst. and acacia false shields - Parthenolekanium corni Bouche. it was observed that it was spreading and causing damage.

Summary. 25 types of pests belonging to 2 classes and different families were identified on citrus plants in the republic. Among them, the dominant species causing the main damage are: greenhouse and cotton mites, acacia, peach and polys aphids, belonging to the family of spider mites (Tetranychidae) of the family of mites (Acariphormes) and representatives of the class of insects.

List of used literature

1. Асякин, Б.П. Применение хищной гаплицы Aphidoletes aphidimyza Rond. (Diptera, Cecidomyiidae) в борьбе с тлями в теплицах. /Записки ЛСХИ / ЛСХИ. – Л. 1973. Вып. 212. – С. 10-14.
2. Ахатов А.К., Ижевский С.С., Мешков Ю.И., Борисов Б.А. Защита тепличных и оранжерейных растений от вредителей. – М.: КМК, 2004. – 307 с.
3. Бегляров Г.А., Ущеков А.Т.; Методические указания по биологическому методу борьбы с тлями в защищенном грунте. ВНИИФ – М., 1983. – 28 с.
4. Дорохова Г.И., Верещагина А.Б, Красавина Л.П. Тли (Homoptera Aphididae): диагностика, особенности биологии, разведения и методы учета в закрыггом грунте. - СПб.: ВИЗР, 2001. – 32 с.
5. Куликова, Е.Г. Оценка вредоносности кокцид. //Ж.Защыта растений. -1987. - № 10. – С. 27-28.
6. Тряпицьн В.А., Шапиро В.А., Щепетильникова В.А. Паразиты и хиыщики вредителей сельскохозяйственных культур. – Л., 1982. – 256 с.
7. Хўжаев Ш.Т. Ўсимликларни зараркунандалардан уйғунлашган химоя қилишнинг замонавий усул ва воситалари. – Тошкент, 2015. – Б. 102-186.

ISSN NO: 2771-8840
Date of Publication: 30-09-2023

8. Яхонтов В.В. Вредители сельскохозяйственных растений и продуктов Средней Азии и борьба с ними. – Ташкент: Госкомиздат. УзССР, 1953. – 663 с.
9. Сулаймонов О.А., Хакимов А.А., Яхёев Ж.Н. СОСУЩИЕ ВРЕДИТЕЛИ ЦИТРУСОВЫХ КУЛЬТУР И МЕТОДЫ БОРЬБЫ // Актуальные проблемы современной науки. – 2020. – С. 178-180.
10. Сулаймонов О.А., Хакимов А.А., Яхёев Ж.Н. ЦИТРУСОВАЯ БЕЛОКРЫЛКА (DIALEURODES CITRI) / Сборник материалов IV международной научно-практической конференции, «Неделя науки в Крутах - 2018». – Украина, 2018. – С. 165-167.
11. Yakhyoev J.N., Kimsanbayev Kh.Kh., Murodov B.E., Akhmedova Z.Y. LEVEL OF DISTRIBUTION OF HEMIPTERA: DIASPIDIDAE IN THE NORTHEAST REGION OF UZBEKISTAN // European Journal of Agricultural and Rural Education. – 2021. – С. 6-10.
12. Izbosarov B., Utaganov S., Sobirov B., Yakhyoev J., Tojiyev A. Bioecology and harm of whiteflies and pest risk analysis // The American Journal of Agriculture and Biomedical Engineering. – 2022. – С. 41-45.
13. Khudarganov K., Azimov N., Yakhyoev J., Shaymanov M. DESCRIPTION OF THE PHYTOSANITARY RISK ANALYSIS PROCESS PERFORMED ON THE LAWN TO DETERMINE A PHYTOSANITARY RISK MANAGEMENT // The American Journal of Agriculture and Biomedical Engineering. – 2022. – С. 15-19.
14. Obidzhanov D., Mirzaev M. Growing a lemon in trenches and protecting against pests. //The American Journal of Agriculture and Boimedical Engineering. (ISSN – 2689-1018) Published: December 30, 2021| Pages: 15-18. Doi: https://doi.org/10.37547/tajabe/Volume03Issue12-01.
15. Dilshod Obidzhanov & Shermamat Khazratkulov. Citrus varieties for growing in wide trenches of Uzbekistan. The American Journal of Agriculture and Biomedical Engineering, (2022). 4(09), P. 11–16. Published Date: September 30, 2022 |Crossref doi: https://doi.org/10.37547/tajabe/Volume04Issue.