



**Copyright:** Original content from this work may be used under the terms of the creative commons attributes 4.0 licence.

## Rate Of Diaspididae In Unabi Plant

**Khojimurod Khamrokulovich Kimsanbayev**

Doctor Of Biological Sciences, Tashkent State Agrarian University, Uzbekistan

**Bakojon Egambdiyevich Murodov**

Candidate Of Biological Sciences, Tashkent State Agrarian University, Uzbekistan

**Jurabek Nodirjonovich Yakhyoev**

Junior Researcher, Institute Of Zoology Of The Academy Of Sciences Of The Republic Of Uzbekistan

### ABSTRACT

Dangerous pest is widespread in Uzbekistan. The most dangerous of these are diaspidids. They damage many plants. Unabi, apple, pear, plum, quince, peach, almond, hawthorn, pine, poplar and other orchards and ornamental trees are damaged.

According to the taxonomic composition of the fauna of diaspidids found in the unabi orchards of Tashkent region, the number of generations in the family Diaspididae in the fauna was 6 (Diaspidiotus, Salicicola, Parlatoria, Lepidosaphes, Chlidaspis and Pseudaulacaspis) and the number of species was 12.

Diaspidiotus (4 species, 33,3%) and Lepidosaphes (3 species, 25,0%) predominate in the distribution of species, while Salicicola, Parlatoria, Chlidaspis and Pseudaulacaspis are monotypic. species, representing 16,7% of the total fauna, while representatives of the Salicicola, Chlidaspis and Pseudaulacaspis genera had 1 species, accounting for 25,0% of the total fauna.

### KEYWORDS

Unabi plant, population, bioecology, habitat, mature breed, offspring, larvae, scales.

### INTRODUCTION

Today, diaspidids, which are serious pests of fruit and ornamental plants, cost the agricultural

and horticultural sector \$ 5 billion a year. The U.S. dollar is hurting. Accordingly, the

identification of harmful diaspid species in fruit and ornamental trees, the development of measures to combat them is of great scientific and practical importance.

Today, the world's leading countries pay special attention to the study of the bioecology of orchard pests, which play an important role in the sustainable development of the agricultural complex and food security. Here, especially in the orchards of our republic, pests for almost all species and widespread California scale fruit trees are mainly unabi, apple, pear, plum, cherry, peach, cherry, apricot, as well as black currant, hawthorn, rose, from the forest and ornamental forest trees. willow, flowers, red fruit shrubs cause serious damage to plants.

## MATERIALS AND METHODS

The research was conducted in Tashkent region, Institute of Zoology of the Academy of Sciences of the Republic of Uzbekistan, Laboratory of Entomophagous Ecology and Theoretical Foundations of Biosteres, Department of Plant Protection of Tashkent State Agrarian University and the State Inspectorate for Plant Quarantine under the Cabinet of Ministers.

Samples of diaspids belonging to 6 genera in the Diaspididae family were collected from different developmental stages of the total identified species. These insect specimens were collected in the offspring section as follows: Diaspidiotus 4, Salicicola 1, Parlatoria 2, Lepidosaphes 3, Chlidaspis 1, and Pseudaulacaspis 1.

The main materials were collected from the unabi gardens of Tashkent region in 2019-2020. In the study, the lower, middle, and upper tiers

of the plant were examined to identify diffuse diaspids, and the diaspids were identified during the current wintering periods and at which stage of development in the food plant. Collection and storage of accumulated diaspids N.S.Borxsenius [6; -130 p.] Was carried out on the basis of the methodology. Collection materials were scaled from the branches of the forage plant 10-15 cm long, in separate boxes, the specimens on the leaves were stored in a herbarium.

The study of the biological properties of diaspids began in the spring and was systematically monitored at weekly intervals. Observations were made using the bioassay method (once a day) in selected model trees based on the order of diaspids in the plant body, branches and twigs, as well as the order of diaspid distribution in fruits and leaves. In addition, when taking samples from diaspids, an attempt was made to take the trees on the circular sides of parts of the same height from the ground. Variation in the number of diaspids in the module trees, the life processes of laying eggs, the emergence of larvae, the emergence of males were also studied.

The morphological and classification characteristics of diaspids have been studied on the basis of a number of identifiers and scientific sources relevant to the field. Including A.D.Arkhangel'skaya [3; 158-p.], N.S.Borxsenius [6; 130-b., 7; 382-b.], E.M.Dantsig [8; 17-b., 9; 443 - 445-b., 10; 172 - 181-b., 11; 368-p.], N.I.Abdrashitova, N.V.Gabrid [1; 181 - 182-b., 2; 33 - 36-p.], I.D.Batiashvili [5; 48 - pp. 51].

The study of the biological properties of diaspids took into account, first of all, the period of their wintering, the emergence of larvae from eggs in spring, the gradual

transition of larvae from the first to the second year, barking, young females or males. The development of diaspidids found in selected and isolated model unabi tree bushes was monitored on a regular basis (Tashkent region).

The fauna and taxonomic analysis of diaspidids found in unabi trees of Tashkent region were studied. The results of the taxonomic analysis of diaspidids found in the unabi plant of Tashkent region are given below (Table 1).

**RESULTS AND DISCUSSION**

**Table 1**

**Taxonomic list of diaspidids in unabi plants of Tashkent region**

№	Order		Hemiptera
	Family		Diaspididae
Latin name		Synonym	
		Genus	<b>Diaspidiotus</b>
1	1	<i>Diaspidiotus perniciosus</i> (Coms., 1881)	<i>Quadraspidotus perniciosus</i>
2	2	<i>Diaspidiotus elaeagni</i> (Borch., 1939)	<i>Aspidiotus elaeagni</i>
3	3	<i>Diaspidiotus prunorum</i> (Lai., 1931)	<i>Diaspidiotus prunorum</i>
4	4	<i>Diaspidiotus turanicus</i> (Borch., 1935)	<i>Aspidiotus turanicus</i>
		Genus	<i>Salicicola</i>
5	1	<i>Salicicola archangelskyae</i> (Lin., 1929)	<i>Leucaspis archangelskyae</i>
		Genus	<i>Parlatoria</i>
6	1	<i>Parlatoria oleae</i> (Col., 1880)	<i>Diaspis oleae</i>
7	2	<i>Parlatoria ephedrae</i> (Lin., 1911)	<i>Parlatoarea ephedrae</i>
		Genus	<i>Lepidosaphes</i>
8	1	<i>Lepidosaphes turanica</i> (Arch., 1937)	<i>Mytilaspis turanica</i>
9	2	<i>Lepidosaphes ulmi</i> (Lin., 1758)	<i>Coccus ulmi</i>
10	3	<i>Lepidosaphes pistaciae</i> (Arch., 1930)	<i>Pistaciaspis pistaciae</i>
		Genus	<i>Chlidaspis</i>
11	1	<i>Chlidaspis asiatica</i> (Arch., 1930)	<i>Chionaspis asiatica</i>
		Genus	<i>Pseudaulacaspis</i>
12	1	<i>Pseudaulacaspis pentagona</i> (Tar., 1886)	<i>Diaspis pentagona</i>

As can be seen from the table, according to the taxonomic composition of the fauna of diaspidids found in unabi plants of Tashkent region, the number of genera in the family *Diaspididae* in the fauna is 6 (*Diaspidiotus*, *Salicicola*, *Parlatoria*, *Lepidosaphes*, *Chlidaspis* and *Pseudaulacaspis*) and the number of species is 12.

The distribution of diaspidids in the fauna by families was studied. In terms of species distribution, *Diaspidiotus* (4 species, 33,3%) and *Lepidosaphes* (3 species, 25,0%) predominate, while *Salicicola*, *Parlatoria*, *Chlidaspis* and *Pseudaulacaspis* are monotypic (Figure 1).

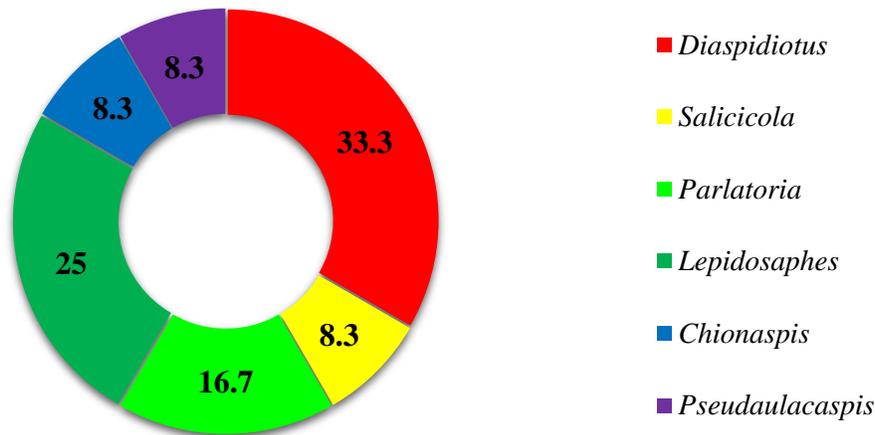


Figure 1. The incidence rate of the Diaspididae family in unabi fruit trees.

During the observations, in 2019-2020, the species of scale beetles were identified in the unabi fruit trees of Tashkent region, including very dangerous species. These include the California scale (*Diaspidiotus perniciosus* Comst.), The purple scale (*Parlatoria oleae* Colvee), the apple scale (*Lepidosaphes ulmi* Lin.), The plum scale (*Pseudaulacaspis pentagona* Targ.),

Central Asian Plum Shield (*Chlidaspis asiatica* Arch.) and Elaeagnus comma shield (*Lepidosaphes turanica* Arch.) was studied.

*Parlatoria oleae* ranks highest in the unabi orchards at 43,4%, *Diaspidiotus perniciosus* 35,7%, *Pseudaulacaspis pentagona* 31,5%, *Lepidosaphes ulmi* 24,1%, and *Lepidosaphes turanica* 20,9%, while the remaining species 8,6% (Figure 2).

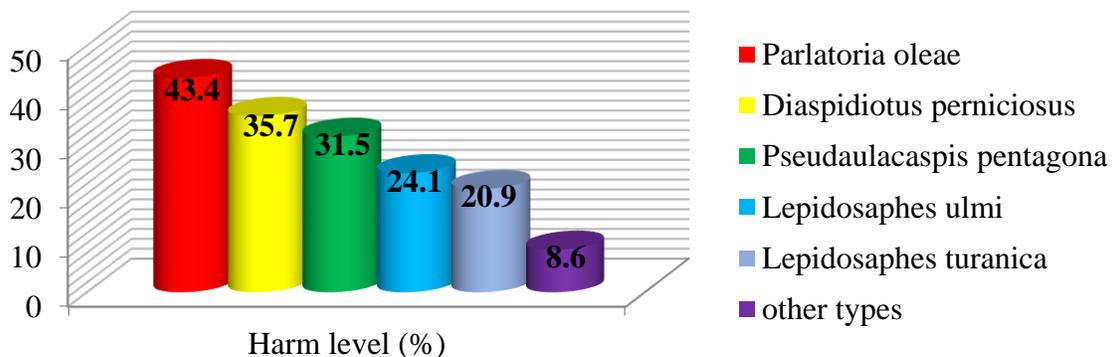


Figure 2. Level of damage of scale in Unabi gardens (Tashkent region, 2019-2020).

### CONCLUSION

According to the taxonomic composition of the fauna of diaspidids found in the unabi plant

of Tashkent region, the number of generations in the family Diaspididae in the

fauna was 6 (Diaspidiotus, Salicicola, Parlatoria, Lepidosaphes, Chlidaspis and Pseudaulacaspis), and the number of species was 12.

As can be seen from the table, according to the taxonomic composition of the fauna of diaspid found in unabi plants of Tashkent region, the number of genera in the family Diaspididae in the fauna is 6 (Diaspidiotus, Salicicola, Parlatoria, Lepidosaphes, Chlidaspis and Pseudaulacaspis) and the number of species is 12.

The distribution of diaspid in the fauna by families was studied. In terms of species distribution, Diaspidiotus (4 species, 33,3%) and Lepidosaphes (3 species, 25,0%) predominate, while Salicicola, Parlatoria, Chlidaspis and Pseudaulacaspis are monotypic

Parlatoria oleae ranks highest in the unabi orchards at 43,4%, Diaspidiotus perniciosus 35,7%, Pseudaulacaspis pentagona 31,5%, Lepidosaphes ulmi 24,1%, and Lepidosaphes turanica 20,9%, while the remaining species 8,6%.

## REFERENCES

1. Абдрашитова Н.И., Габрид Н.В. Методическое пособие по сбору, изучению и определению кокцид и тлей деревьев и кустарников Кыргызстана. Бишкек. 2005. –С. 181-182.
2. Абдрашитова Н.И. Кокциды деревьев и кустарников города Бишкека // Актуальные проблемы агрономии. - Бишкек, 1994. - С. 33-36.
3. Архангельская А.Д. Кокциды средней Азии. - Ташкент: Издательство Комитета наук Уз.ССР. 1937. -158 с.
4. Архангельский П.П. Садовые кокциды (Coccoidae) Узбекистана. – Ташкент: Соц. наука и техника.1938. - 56 с.
5. Батиашвили И.Д. Методика лабораторных исследований // Вестник Академии наук ГССР, 1948. - Т. IX. -С. 48-51.
6. Борхсениус Н.С. Определитель червецов и щитовок (Coccidae) Армении. -Ереван, 1949. -130 с.
7. Борхсениус Н.С. Фауна СССР. Насекомые хоботные, подотр. Червецы и щитовки (Coccidae) семейство мучнистые червецы (Pseudococcidae). - М-Л, 1949. - 382 с.
8. Данциг Е.М. Фауна и экология кокцид (Homoptera, Coccoidea) Ленинградской области.: Автореф. дис. канд. биол. наук.- Л.: 1960. - 17 с.
9. Данциг Е.М. Кокциды (Homoptera, Coccoidea) Ленинградской области // Энтомологическое обозрение.- Санкт-Петербург, 1959. - Т. 38, вып. 1. - С. 443-445.
10. Данциг Е.М. Новые и малоизвестные виды мучнистых червецов (Homoptera, Coccoidea, Pseudococcidae) из Ленинградской области // Энтомологическое обозрение.-Санкт-Петербург, 1960. - Т. 39, вып. 1. - С. 172-181.
11. Данциг Е.М. Кокциды Дальнего Востока СССР (Homoptera, Coccinea) с анализом филогении кокцид мировой фауны. - Л.: Наука, 1980. - 368 с.

12. Кимсанбаев Х.Х., Муродов Б.Э., Ортиков У.Д., Сулаймонов О.А., Яхёев Ж.Н. Карантинные мероприятия против калифорнийской щитовки (*Quadraspidiotus perniciosus Comst*) / Агроэкологические аспекты устойчивого развития АПК. – 2019. – С. 91-93.
13. Кимсанбаев Х.Х., Муродов Б.Э., Ортиков У.Д., Анорбаев А.Р., Яхёев Ж.Н. Применения златоглазки в борьбе с калифорнийской щитовки (*Quadraspidiotus perniciosus comst.*) на яблоне // Актуальные проблемы современной науки. – 2019. – № 4 (107). – С. 176-178.
14. Кимсанбаев Х.Х., Муродов Б.Э., Ортиков У.Д., Сулаймонов О.А., Яхёев Ж.Н. Биологическая эффективность применение препарата хектолинеум 5% к.с против калифорнийской щитовки (*Quadraspidiotus perniciosus comst.*) на яблоне // Актуальные проблемы современной науки. – 2019. – № 4 (107). – С. 179-181.
15. Кимсанбаев Х.Х., Муродов Б.Э., Ортиков У.Д., Сулаймонов О.А., Яхёев Ж.Н. Вредитель яблони калифорнийская щитовка (*Quadraspidiotus perniciosus Comst.*) и применение препарата Энтомин к.э. против неё // Актуальные проблемы современной науки. – 2020. – № 1 (110). – С. 105-107.
16. Кимсанбаев Х.Х., Муродов Б.Э., Яхёев Ж.Н. Карантинные мероприятия против калифорнийской щитовки (*quadraspidiotu sperniciosus comst*) // Молодой Ученый, – 2020, – С. 63-66.
17. Кимсанбаев Х.Х., Сулаймонов Б.А., Муродов Б.Э., Яхёев Ж.Н. Изучение биоэкологии и фенологическое развитие калифорнийской щитовки (*quadraspidiotus perniciosus comst.*) в Узбекистане // Актуальные проблемы современной науки 2020 г, №5(114), – С. 51-55.
18. Муродов Б.Э., Машарипов У.А., Яхёев Ж.Н. Калифорнийская щитовка – *Quadraspidiotu sperniciosus Comst* // Образование и наука в России и за рубежом. – 2017. – № 1 (30). –С. 21-23.
19. Муродов Б.Э., Яхёев Ж.Н. Карантинный вредители внутреннего карантина Республики Узбекистан // Образование и наука в России и за рубежом. – 2017. – № 3 (32). –С. 32-36.
20. Муродов Б.Э., Сулаймонов О.А., Яхёев Ж.Н. Калифорнийская щитовка на яблоне // Образование и наука в России и за рубежом. – 2018. – № 12 (47). – С. 118-122.
21. Муродов Б.Э., Ортиков У.Д., Яхёев Ж.Н. Биоэкология и развития калифорнийской щитовки (*Quadraspidiotus perniciosus Comst.*) в Узбекистане // Евразийский Союз Ученых (ЕСУ). – 2020. – 5 (74). – С. 39-40.
22. Ортиков У.Д., Яхёев Ж.Н., Пардаев Х.Х. Опасный кокцид. Калифорнийская щитовка (*Quadraspidiotus perniciosus Comst*) // Образование и наука в России и за рубежом. – 2018. – № 6 (41). – С. 105-107.

23. Яхёев Ж.Н., Кимсанбаев Х.Х., Муродов Б.Э., Сулаймонов О.А., Развития калифорнийской щитовки в Узбекистане // Образование и наука в России и за рубежом. – 2018. – № 16. – С. 225-228.
24. Kosztarab M., Kozar F. Fauna Hungariae, N. 131, Vol. XVII, Part 22, Scale Insects - Coccoidea - Budapest, 1978. 192 p.
25. Kosztarab M., Kozar F. Scale Insects of Central Europe // - Budapest, 1988. 456 p.
26. Kimsanbayev X.X., Murodov B.E., Ortikov U.D., Sulaymonov O.A., Yakhyoyev J.N. Bioecology, crystal pharmaceutical support and efficiency of california scale // International Journal of Research. With impact factor 5.60. – 2019. – № 6. – P. 142-148.
27. Kimsanbayev X.X., Murodov B.E., Ortikov U.D., Yakhyoyev J.N. Extension and harmfulness of californian scale in apple orchards // JOURNAL OF AGRO PROCESSING. 2020 | Pages: 104-112.
28. Murodov B.E., Ortikov U.D., Yakhyoyev J.N. Bioecology of california scale (*Quadraspidiotus perniciosus* Comst) in Uzbekistan / Proceedings of International Multidisciplinary Scientific Conference on Innovative Technology. Organized by Novateur Publications, India. May 25th, – 2020. – P. 104-107.
29. Murodov B.E., Yakhyoyev J.N. Quarantine Pests Of Internal Quarantine Of The Republic Of Uzbekistan // Education and science in Russia and abroad. 2017 | Pages: 32-36.
30. Yakhyoyev J.N., Kimsanbayev Kh.Kh., Murodov B.E., Sulaymonov B.A. Bioecology And Phenological Development Of The Californian Scale (*Quadraspidiotus Perniciosus* Comst.) In Uzbekistan // The American Journal of Agriculture and Biomedical Engineering. With impact factor 5.312. USA. August 02, 2020 | Pages: 124-131.
31. Yakhyoyev J.N., Kimsanbayev Kh.Kh. Bioecology And Species Of Diaspididae In Fruit Gardens // The American Journal of Agriculture and Biomedical Engineering. With impact factor 5.312. USA. November 30, 2020 | Pages: 104-112.