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Coccids – As Willow Pests (*Coccinea*)

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Annotation: The article describes the flora of Uzbekistan. The richest flora of Central Asia has more than 6000 species of different plants. The richest in species in the flora of the republic are complex, legume cereals, marsh and others. The most common in the conditions of Uzbekistan are considered to be willow trees. Representatives of insects from the order Equidacteriaceae often cause serious harm. The author considers coccids as small insects with a stabbing-sucking oral apparatus that are harmful to willows.

Key words: willow (poplar, willow) trees, insects, *Homoptera*, *Coccinea*, *Diaspididae*, *Caccida*, larvae - "vagrants"..

In the conditions of Uzbekistan, willow (poplar, willow) trees are very often attacked and seriously harmed by representatives of insects from the order *Homoptera* of the suborder Coccids (*Coccinea*), families of shields (*Diaspididae*) and false shields (*Caccidae*).

Among the shields of particular economic importance are: purple shield - *Parlatoria oleae* Colvee., California - *Qnadraspidiotus perniciosus* Comst., Central Asian comma-shaped - *Lepidosaphes mesasiatica* Borch., apple comma - *L. ulmi L.* and others (Vasiliev, Livshits, 1984; Azimov et al., 1993; Kim and Yakhontov, 1972; Kim, Burkhanov, 1980, etc.). And the false shield is Turanian (*Rhodococcus turanicus* Arch.) , acacia - (*Parthenolecanium corni* Bouche.) and others.


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False shields and shields, especially often found on poplars:

1 – акациевая ложнощитовка, 2 – туранская ложнощитовка,
3 – purple shield, 4 – Central Asian zayat-shaped shield,
5 – apple comma-shaped shield.

Coccids are relatively small insects with a stabbing-sucking mouth apparatus. They are distinguished by sexual dimorphism - a sharp morphological difference between females and males; females are wingless and sedentary, males are winged and do not feed. Some species of coccids reproduce parthenogenetically, that is, without fertilization. The larvae that are born from eggs - "vagabonds" spread along the crown and other trees. Having found a convenient place, they pierce the tissue and begin to feed. After two lines, they turn into an adult female and form on themselves different configurations and colors of shields that serve as a shelter for her. In systematics, coccid shields serve as one of the important features for determining a species.

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Like all insects, coccids inject with saliva into the tissue certain types of enzymes that serve as a condition for extraintestinal nutrition. Such trees experience oppression: over time, the leaves begin to turn yellow, young branches, and sometimes even trees, lag far behind in growth and dry out.

Usually, coccids develop one generation a year, but in the favorable thermal conditions of Central Asia give 2 or even 3 generations. During the formation of the organism, females can become victims of various species of parasitic insects from the order Hymenoptera. The paralysis of coccid individuals can be observed by the presence of small rounded holes on the shields (see figure). Sometimes the degree of infection of individuals in the colonies of false shields reaches 72-97%.

Very often poplars are infected with Central Asian and apple comma-shaped species of shields. So, in 2018-2020, in the gardens in the Baghdad district of the Fergana region, poplars were inhabited with these types of shields 12-25% - 3-5 years old and 12-25% - 6-9 year olds.

The main and effective way to protect trees from coccids is the method of chemical treatments. The effectiveness of these procedures is highly dependent on both the timing and frequency of treatments and the insecticide used. Due to the fact that over time the means and tactics of the struggle are constantly subject to changes, it was necessary to improve these measures through scientific survey work. The bulk of the work was carried out on the territories of forestry enterprises in the Andijan region during 2017-2020. The work used special methodological instructions issued by the State Chemical Commission of the Republic of Uzbekistan in 2004 by the editors of Prof. Sh.T. Khodjaev. The purpose of the experiments were: the extraction of effective samples of insecticides against coccids; the timing of treatments depending on the biological characteristics of the species; differences in the multiplicity of treatments, etc. Treatments were carried out with knapsack manual sprayers with a motor; the flow rate of the working fluid was up to 600 l / ha.

In the experimental areas, the objects - pests were: comma-shaped shields, as well as two types of false shields. In 2018 and 2019, preliminary (reconnaissance) field plot experiments were carried out, and in 2020 - field, production.

The chosen terms of treatment imply not only the vulnerable timing of shields and false shields, but also other types of related pests (aphids, cicadas, species of beetles and butterflies that affect poplars after overwintering). The first spring treatment of trees was timed to the moment of mass birth and spread of larvae - "vagrants" coccids, and the second - in the same month (May) or in the next, against the second generation of the pest.

The pattern of experience, the types of appropriate insecticides, the multiplicity and timing of treatments are given in the table, which shows the following.

Effectiveness of chemical treatments against coccids, depending on the timing, multiplicity and type of insecticide

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Field experience, Andijan region RUz, 2020

№	Options	Active ingredient	Processing time		Biological efficiency, %					
					By tree population			By density of coccid		
			I	*II*	*15.06*	*16.07*	*3.09*	*15.06*	*16.07*	*3.09*
I.	**Processed twice:** 1. Mospilan, 20% s.p. – 0,3 kg/ha 2. Каратэ Супер, 20% к.э. – 0,15 л/га	*acetamiprid* *lambdacihalothrin*	.05	2.05	100	90,2	90,6	100	96,7	93,2
II.	**Processed twice:** 1. Alpgor, 40% C.E.– 1.0 litres/ga 2. Superben, 6% c.e. 0,2 litres/ga	*phosphamide – 400 g/l* *indoxacalb-50 g/l + emamectin benzoate-10 g/l*	0.05	0.06	89,5	100	91,6	95,7	100	97,2
III.	**Processed once:** Imidashans, 20% c.e. – 0,3 l/ha	*imidacloprid – 200 g/l*	0.05		87,1	85,0	74,7	93,8	90,3	87,0
IV.	Control *(without processing)*	-	-	-	-	-	-	-	-	-

1. Preventive and more effective against coccids is spring (May); or spring-summer (May-June) 2-fold treatment than a single one. The first treatment should be timed to the moment of mass birth of pest larvae.
2. The most effective insecticides that deserve their wide use in production are: Mospilan - 0.3 kg / ha, Superber - 0.2 l / ha, Karate Super - 0.15 l / ha and Alpgor - 1.0 l / ha.

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Literature

1. Azimov D.A., Bekuzin A.A., Davletshina A.G., Kadyrova M.K. Insects of Uzbekistan.– Tashkent: Fan, 1993. – 320 p.
2. Vasiliev V.P., Livshits I.Z. Pests of fruit cultures. – Moscow: "Kolos", 1984. – 398 p.
3. Kim N.G., Yakhontov V.V. Formation of harmful entomofauna of the field protection forest strips of Uzbekistan // Uzbek Biological Journal. – 1972. -No5.– P. 49-51.
4. Kim N.G., Burkhanov Z. Stem pests of field-protective forest plantations of the south of Uzbekistan // Materials of the tenth conference of young scientists of Uzbekistan on agriculture (forestry). – Tashkent: Ministry of Agriculture of the Uzbek SSR, 1980. – P. 32-36.
5. Khodjaev Sh.T. Methodical instructions for testing insecticides, acaricides, BAS and fungicides (II ed.). – Tashkent: Goshimkommission, 2004. – 103 p. (uzb.).