## ENGINEERING AND SOCIAL SCIENCES

## ISSN: 2349-7793 Impact Factor: 6.876., Volume: 16 Issue: 10 in October 2022

# Use of species belonging to the Cossinellidae family and carnivorous beetles against pests.

## Yunusov Mirzakarim Mirzahalilovich,

Associate professor

## Omonova Sevara Akramjonovna,

## Teacher of Fergana State University

# omonova86@internet.ru

**Abstract**. The article provides information on the biology, ecology, food spectrum, breeding and wintering phases of the khanqizi beetles and some other predatory beetles. Also, many other primary parasites and carnivorous arthropods are represented in each field biocenosis, and their systematic family names are mentioned.

**Key words:** Hardwings, aphid, cicada, comstock kurti, phytonomus, moth, integration, objects, biocenotic, agrotechnical, entomophagous, acariphagous, microbiological, biolaboratory, trichogramma, apantels, bracon, coccinellid, tunnel, mechanization.

Enter. Coccinellids are insects belonging to the Sossinelliidae family of the Soleoptera family. Representatives belonging to the coccinellid family are widespread, and they are of great importance in eliminating dangerous pests on crops. Aphids, mites, worms, scale insects, phytonomus worms are among such dangerous pests.

The body of the beetle is round, the top is domed, the lower shoulder and the upper part of the wing are clearly domed. Eggs are yellow, somewhat large and elongated.

Coccinella beetles lay their eggs in clusters on various parts of plants near aphid colonies. Larvae hatched from predatory eggs and feed on sap. The newly hatched larvae sit in the eggshells (tightly pressed together) for some time, and as soon as they find nectar, they begin to eat it [1,2,3,4,5,6,7,8,9,10,11].

Young worms are not as mobile. As it gets older, it becomes very mobile and moves from ball to ball of sap. Larvae live four years. When it's time to pupate, the larvae cling to something with the back of their body.

Humps are less mobile, but when disturbed, they raise the front part of their body from the top and stand in a perpendicular position. The places where the mushrooms are grown can be different. Fungi are often located on the leaves or branches of plants on which the larvae feed. The beetle that emerges from the mushrooms forcefully gnaws the sap and begins to mate after 10-12 days, after a day or two it begins to lay eggs. Females do not lay eggs regularly. [12,13,14,15,16].

The maximum number of eggs (38-42 per day) is laid only 10-15 days after starting to lay eggs. The egg-laying period of females lasts up to 45 days. One female can lay 250 to 2900 eggs. Coccinellid beetles winter in mountains of different altitudes.

89	ISSN 2349-7793 (online), Published by INTERNATIONAL JOURNAL OF RESEARCH IN
	COMMERCE, IT, ENGINEERING AND SOCIAL SCIENCES.,
	under Volume: 16 Issue: 10 in October-2022
09	https://www.gejournal.net/index.php/IJRCIESS
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In the spring, it leaves the countryside much earlier. In the spring, they fly out of the countryside much more. The temperature and humidity of the air in rural areas are among the main conditions that cause beetles to become active.

The beetles that have left the village appear at the beginning of April or in the middle of April, that is, when the average overnight temperature reaches 12-15 0. Depending on the quantity and quality of food and weather conditions, their additional feeding lasts 10-22 days. Then they begin to mate and lay eggs.

7-spotted beetles are the most omnivorous among carnivores. Each beetle eats 50 to 100 aphids a night, and the larvae are particularly nasty. As a result of a sharp decrease in the number of aphids in all places, in late July and early August, most of the beetles fly to the mountainous regions to hibernate.

Seven-spotted and variable khanqizi beetles are collected in Oktash, Khojakent, Khumson, Suvkok in the Tashkent region, i.e. at an altitude of 800-2500 meters above sea level. They are often singly, sometimes in groups of 15-20.

As soon as the autumn frosts fall, the beetles fly from their hiding places to the windiest places near the dams and to the mountains, where they gather in their thousands. Some of the balls collected in the village are located close to each other.

They usually overwinter in the same places every year, which allows the location of overwintering balls to be mapped. The most effective species of coccinellids in Uzbekistan include: 7-spot khanqizi, variable five-spot, 2-spot semiadalia and brumus. Other varieties are rare.

*Wild shackles.* Cockroaches belong to the Hemiptera family, which are incompletely developed. There are 7 families of kandals that live at the expense of other arthropods. Orius albidepennis Reut and Orius niger Wolff, belonging to the Antocoridae family, are especially important to this family [17,18,19,20,21,22].

These spiders, which are widespread and powerful, benefit by sucking the eggs and larvae of the spider mite. Each of these can feed on more than 100 eggs and larvae in a day. Apart from these, we can mention nabius - family Nabidae, and mirids - family Miridae. In addition to spider webs, predatory caterpillars feed on aphids, thrips, and small worms. Predatory caterpillars can even reduce cotton bollworm eggs by up to 50%.

In the form of a mature breed, predatory kandals hibernate under the remains of various plants and lead an active life from March to October. During this period, it gives 4-5 joints and significantly reduces the influence of many harmful insects and spider mites.

*Cane-eating thrips*. This incompletely developed insect belonging to the Thipidae family of the family of thrips or thrips is widespread in Central Asia and is one of the most effective predators that reduce the number of spider mites.

Adult female thrips are pale yellow in color with bulging black eyes. The tips of the eightjointed whiskers are dark. Three dark gray spots on the front wings are characteristic of this predator. The front part of the head and chest is flat. The wings reach the end of the abdomen. The body length

90	ISSN 2349-7793 (online), Published by INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT, ENGINEERING AND SOCIAL SCIENCES., under Volume: 16 Issue: 10 in October-2022 https://www.gejournal.net/index.php/IJRCIESS
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of the female reaches 1.16 mm. The insect has egg, larval (2-year-old) pronymph and adult forms. It develops by giving 9-10 joints in one year. It is a specialized combination of a spider mite, and when the ratio to the pest is up to 1:20, it is noted to be effective in reducing its number by 81-98%. [23,24,25,26,27,28,29,30,31,32,33,34,35].

The most sensitive part of this insect is wintering. The insect is resistant to cold, usually most of it (except the pronymph) dies during the winter. The rest begins to develop together with the spider mite in spring (March-April) and regains its influence by autumn. This is helped by his extreme mobility and the fact that he is a coward. In one day, one thrips eats up to 50 forms of prey.

The Stetorus beetle is another effective specialized predator of the spider mite, belonging to the Coleoptera family of beetles. Grown-up beetles hibernate in the cotton fields in the surface layer of the soil up to 5 cm deep, under thick bushes, under the fallen leaves on the banks of ditches, in the crevices of fields and tree bark. In the spring, when the average ten-day air temperature is about 140 degrees, the peasants start to leave the village. This corresponds to the end of March and the beginning of April. Female beetles will need additional nutrition. Female beetles begin to lay eggs 10-15 days after hatching. They can lay up to 150 eggs individually in spider mite nests on leaves. The total required effective temperature for each joint of the stetorus is 360 0.

During the season, stetorus develops up to five joints. This beast is very greedy. The beetle and its larvae feed on spider mites. At the same time, first-instar larvae feed mainly on eggs, and adults feed on eggs and mature mites. One larva eats up to 800-1100 mites during its lifetime. In the spring, young larvae eat up to 50 mites a day, and in the summer up to 200 mites. Stetorus beetles will retaliate by feeding on spider mite eggs. They are much worse than larvae. An adult beetle lives for about two months and eats 8-9 thousand spider mites during this time. Experiments show that two larvae and three adult beetles can destroy more than 3,000 eggs and mites in five days. The most widespread period of stetorus in cotton is mid-summer (end of June - beginning of July). [36,37,38,39,40,41,42,43,44,45].

*Predatory mites.* Predatory mites are also important in reducing the number of harmful arthropods. Mites belong to 2 families of the arachnid class. 43 local species of predatory mites belonging to 11 families and 27 genera have been identified in Uzbekistan. Most of these species are mainly found in garden biotopes where insecticides are rarely used, and in grasses around field crops.

Predatory mites appear in nature at the end of April - beginning of May and attack the eggs, larvae and adults of herbivorous mites. 30-35 eggs and more than 20 spider mite life forms can be lost in one predator life. Predatory mites develop faster than spider mites and give more than 20 generations per year. The effectiveness is especially high when it is 1:8-10 against harmful mites.

*Predatory flies.* Belongs to two-winged or flies (Diptera). These insects are of great importance in agricultural entomology. Among the predatory flies, syrphids, syrphids, and silvery flying flies (serebryanki) are important in killing harmful organisms of crops. In addition to these, tachina flies, whose larvae enter the bodies of various insects and parasitize them, have a special place.

Wasps or flower flies are large, brightly colored flies that look like wasps or bees. We often see these insects flying or landing on plant flowers. We put up to 500 eggs of mature breeds in aphid colonies. Legless, pear-shaped larvae feed voraciously on plant sap.

91	ISSN 2349-7793 (online), Published by INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT, ENGINEERING AND SOCIAL SCIENCES., under Volume: 16 Issue: 10 in October-2022 https://www.gejournal.net/index.php/IJRCIESS
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## ISSN: 2349-7793 Impact Factor: 6.876., Volume: 16 Issue: 10 in October 2022

The size is 6-20 mm, the body narrows towards the front, the color is yellow, green, reddish, etc., it moves slowly and clumsily. During its life, each larva can attack about 200 aphids by molting twice. After maturity, the larva cocoons in its place inside a false pupa and starts a new instar after 2-3 weeks. In a year, different species develop from one to several joints.

Due to their rapid reproduction and abundant feeding, syrphid flies can be included among the ranks of very effective entomophages. Therefore, in the following years, research is being carried out on the artificial reproduction of these insects in biolaboratories and their use in greenhouses. [46,47,48,49,50,51,52,53,54,55,56].

*Gallitsa*. Small (2mm) these flies resemble mosquitoes. In the conditions of Uzbekistan, predatory gallica aphidomiza is widespread. Mature breeds of this insect appear in April-May, they hardly feed, they lay eggs singly or in small balls in aphid colonies. Eggs can develop only in the presence of high humidity. If the air humidity drops below 45% during the summer, larvae will not develop in the eggs. Therefore, these insects develop well in the mountainous regions of Central Asia and in the spring and autumn seasons, as well as in greenhouses.

Larvae (2.2 mm) are thinner, reddish-yellow in color, and can build 40-80 larvae in their lifetime. After completing development, it falls to the ground and becomes a mushroom at a depth of 4-5 cm. After 2 weeks, the new joint flies will begin to fly. In one year, it feeds on various juices and produces 8-10 generations. A method has been created to artificially breed these flies and use them against aphids in greenhouses.

Silvery hoverflies. There are more than 100 types of these. Species belonging to the Levokpis genus are especially important. The flies are small (1.5-2.5 mm), beautiful, with dark stripes on the upper side of the chest, and two spots on the middle of the abdomen. Mature breeds begin to fly in May-June. During the hot hours of the day, they are especially active and begin to lay eggs.

Females lay 50-70 eggs in an aphid colony. In 2-4 days, larvae emerge from them and begin to feed on aphids, "daydi" larvae of turtles and other small soft-bodied animals. Larvae move in a unique, wave-like way like walking worms. It ripens in 4-5 days and grows on the plant itself or in the soil. After developing for 10 days in a barrel-shaped, reddish false cocoon, it starts a new joint. It grows 3-4 times a year. *Tahina flies*. Because the flies belonging to this family are large and stiff, they are also called "yejemukhi" or hedgehog flies. Most of the taxina live as parasites on various insects. Fly eggs laid on leaves are eaten by worms along with leaf flesh. The larva of the fly hatched from such an egg eats the worm's body and becomes an adult.

Also, in each field biocenosis, there are many other primary parasites and carnivorous arthropods, of course, we cannot describe them all in detail, but we will mention their systematic family names: jujilices, braconids, aphidiids. , ichneumonids, ants, spiders, etc. Many of these together contribute to maintaining the balance of the natural environment. [57,58,59,60,61,62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85,86,87,89,90,91,92].

Summary. The use of entomopathogenic microorganisms (bacteria, fungi, viruses, the simplest organisms) is of particular importance among the biological means used to eliminate harmful organisms. Several different biopreparations are produced by the microbiological industry.

92	ISSN 2349-7793 (online), Published by INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT, ENGINEERING AND SOCIAL SCIENCES., under Volume: 16 Issue: 10 in October-2022 https://www.gejournal.net/index.php/IJRCIESS
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It is permissible to use other methods, including chemical control methods, in situations where specialized biological methods are not actively used to control sucking pests of cotton, such as spider mite, plant aphid, spider mite, and spider mite. Therefore, both methods should be combined and complement each other and serve the common goal of saving the crop with the effective use of natural populations of entmophages.

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	ISSN 2349-7793 (online), Published by INTERNATIONAL JOURNAL OF RESEARCH IN
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