

# Specific Composition of Cicada in Alfalfa Fields of Uzbekistan

Kozhevnikova Alevtina Grigoryevna

Tashkent State Agrarian University, Tashkent City, Uzbekistan

**Abstract:** The article presents materials on determining the species composition of cicadas in alfalfa fields of Uzbekistan, their nutritional relationships, morphological and biological features. Studies have shown that 96 species of cicadas were found on alfalfa fields, including 82 species in the Ferghana Valley, 64 species in Northern Uzbekistan, 46 species in Zerafshan Valley and 22 species of cicadas in Southern Uzbekistan. From the families Aphrophoridae, Cicadellidae, Delphacidae, Dictyopharidae, Cixiidae, Tettigometridae and Issidae. Of these, 54 species are nutritionally related to agricultural plants.

**Keywords:** Alfalfa, species composition, pests, cicadas, damage, abundance, agricultural plants, species of cicadas, genital apparatus, polyphages, oligophages

## 1. Introduction

In the Republic of Uzbekistan, alfalfa is the best precursor to cotton. It improves soil structure, enriches it with nitrogen, gives fodder mass and hay rich in protein, mineral salts and other valuable substances. The main advantage of alfalfa in its crop rotation value.

The species composition of insects of alfalfa fields is rich and diverse with insects therefore, the study of the fauna of alfalfa fields is important from a general biocenotic point of view. In addition, alfalfa fields create optimal conditions for wintering, development and reproduction of many insects. Among them, many species harmful to crops [1].

Cicadas are widely represented under diverse conditions, but are especially numerous in grassy communities.

In conditions of artificial irrigation, favorable conditions are created not only for the vegetation of plants such as alfalfa, but also for pests that damage this crop. The physical-geographical and soil-climatic conditions of the research areas allow intensive agricultural production throughout Uzbekistan, from plains to highland meadows. However, the climate of Uzbekistan varies markedly in certain naturally historic zones within the country. Therefore, our studies were carried out mainly in the Ferghana Valley, Northern Uzbekistan, Zerafshan Valley and Southern Uzbekistan, and other territories of Uzbekistan were also covered [2].

## 2. Research Methodology and Materials

- The studies used special and generally accepted methods in entomology.
- The material for this work was 10 years of research conducted in various soil and climatic zones of Uzbekistan.

## 3. Research Results and Discussion

Alfalfa is damaged by various pests, mainly insects, including cicadas. Cicadas are insects with a piercing-sucking mouth apparatus. In addition to short 3-segmented antennae with end setae and 3-segmented tarsi, they are also distinguished by hopping hind legs and wing structure; they have not only longitudinal, but also transverse veins, and the anterior pair is often denser than the posterior [3].

The definition of cicadas is rather complicated, since many species and even genera differ mainly in the structure of the male genital apparatus.

Cicadas live and feed on the underside of leaves. When feeding the larvae and imago of cicadas on the leaves of alfalfa and other plants, pale, irregularly shaped spots form. With severe damage, the assimilation surface of the leaves is greatly reduced [4].

Cicadas of alfalfa fields in Uzbekistan

Table

Types of Cicadas	Soil and climatic zones of Uzbekistan			
	South Uzbekistan	Zerafshan Valley	Northern Uzbekistan	Ferghana Valley
Family Aphrophoridae				
<i>Lepyroniacoleoprata</i> L.	+			+
<i>Philaenus pumarius</i> L.			+	+
Family Cicadellidae				
<i>Austroagalliazachvatkini</i> Vilb.	+	+	+	+
<i>Anacerata gallia aciculata</i> Horv.	+	+	+	+
<i>A. laevis</i> Rib.		+	+	+
<i>A. acuteangulata</i> Zachv.	+	+		+
<i>A. alabugensis</i> Dub.				+
<i>A. collicola</i> Dub.			+	+
<i>A. turanica</i> Dub.				+

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<i>Batracomorphusirroratus</i> Lew.	+	+	+	+
<i>Eupelixcuspidata</i> F.			+	+
<i>Aphrodesferganensis</i> Dub.			+	+
<i>Cicadellaviridis</i> L.	+	+	+	+
<i>Asianidiaasiatica</i> Kusn.	+		+	+
<i>Chloritatanini</i> Wgn.			+	+
<i>Empoascameridiana</i> Zachv.	+	+	+	+
<i>E. minor</i> Zachv.	+		+	+
<i>E. uzbekorum</i> Zachv.			+	+
<i>Kyboascabipunctata</i> Osh.	+	+	+	+
<i>Eremochloritatesellata</i> Leth.			+	+
<i>Tamaricellaparvula</i> Dlab.			+	+
<i>Goniagnatus brevis</i> H.-S.				+
<i>G. rugulosus</i> Hpt.				+
<i>G. guttilennis</i> Kbm.			+	+
<i>G. sanguinisparvus</i> Hpt.				+
<i>Opsiusstigrupes</i> Leth.		+		+
<i>O. pallasii</i> Leth.			+	+
<i>O. versicolor</i> Dist.				+
<i>Pseudophiepsiusdinotatus</i> Sign.		+	+	+
<i>Circuliferopacipennis</i> Leth.	+	+	+	+
<i>C. haematoceps</i> M.-R.	+	+	+	+
<i>Neoliturusfenestratus</i> H.-S.			+	+
<i>N. guttulatus</i> Kbm.			+	+
<i>Balklutharosea</i> Scott.			+	+
<i>B. rhenana</i> Wgn.		+		+
<i>B. mitjajevi</i> Dlab.			+	+
<i>Macrosteleslaevis</i> Rib.	+	+	+	+
<i>M. quadripunctulatus</i> Kbm.	+	+	+	+
<i>M. razvazkinae</i> Dub.			+	+
<i>M. fieberi</i> Edw.			+	+
<i>M. lividus</i> Edw.				+
<i>Deltocephaluspulicaris</i> Fall.			+	+
<i>Reciliaschmidtgeni</i> Wgn.		+	+	+
<i>Chiasmus conspurcatus</i> Perr.		+		+
<i>Doraturopsissheros</i> Mel.		+		+
<i>Doraturahomophyla</i> Fl.			+	+
<i>Aconurajakowlevi</i> Leth.		+		+
<i>A. volgensis</i> Leth.			+	+
<i>Aconurellaprolixa</i> Leth.		+	+	+
<i>Platymetopiusalbus</i> Lind.			+	+
<i>P. chloroticus</i> Put.			+	
<i>P. rostratus</i> H.-S.			+	+
<i>P. dubovskyi</i> Dlab.				+
<i>P. kubulensis</i> Dlab.		+		
<i>Papyrinaviridis</i> Vilb.		+		
<i>Phlepsusintricatus</i> H.-S.		+	+	+
<i>Hardiaturanica</i> Zachv.		+		
<i>Stenomtopiellussigillatus</i> Hpt.			+	+
<i>St. iranicus</i> Zachv.				
<i>Cicaduladivaricata</i> Rib.		+	+	+
<i>Euscelidius mundus</i> Hpt.				+
<i>Euscelislineolatus</i> Brulle		+	+	+
<i>Eu. alsius</i> Rib.				+
<i>Eu. plebejus</i> Fall.			+	+
<i>Paralimmusefferatus</i> Dlab.		+		+
<i>P. angusticeps</i> Zachv.		+	+	
<i>Psamnotettisstriatus</i> L.	+	+	+	+
<i>P. versicolor</i> L.		+		
<i>P. dubovskyi</i> Vilb.			+	+
<i>P. pictipennis</i> Kbm.			+	+
<i>Diplocolenusabdominalis</i> F.			+	
<i>Rhoananushypochlorus</i> Fieb.			+	
<i>Mocuelluscollinus</i> Boh.			+	
<i>Семеісm60Delphacidae</i>				
<i>Asiracaclavicornis</i> F.	+	+	+	+
<i>Kelisiapannonica</i> Mats.		+	+	+

<i>Chloriona unicolor</i> H.-S.		+		
<i>Laodelphaxstriatellus</i> Fall.	+	+	+	+
<i>Muirodelphaxaubai</i> Perr.			+	
<i>Toyapropingua</i> Fieb.	+	+	+	+
<i>Javesellapellucida</i> F.			+	
<i>Ribautodelphaxzeravshanicus</i> Dub.		+	+	+
Family Dictyopharidae				
<i>Dictyopharaeuropaea</i> L.		+	+	+
<i>D. longirostris</i> Wlk.			+	+
Cemeiçm6o Cixiidae				
<i>Hemitropistamaricis</i> Leth.		+		+
<i>H. tamaricola</i> Dub.				+
<i>H. fascilata</i> Horv.		+		+
<i>H. suleiman</i> Dlab.		+		+
<i>Pentastiridiusleporinus</i> L.				+
<i>P. pallens</i> Germ.		+	+	+
<i>Reptalusrufocarيناتus</i> Kusn.	+	+	+	+
<i>Hyalesthesobsoletus</i> Sign.		+	+	+
Family Tettigometridae				
<i>Tettigometravaria</i> Fieb.				+
<i>T. vittelina</i> Fieb.	+		+	+
<i>T. constulata</i> Fieb.		+		+
Family Issidae				
<i>Scorlupasterasiaticus</i> Leth.	+	+	+	+
<i>Brachyprosopabicornis</i> Kusn.	+	+	+	+

As can be seen from the table, 96 species of cicadas are found on alfalfa fields of Uzbekistan, including 82 species in the Ferghana Valley, 64 species in Northern Uzbekistan, 46 species in Zeravshan Valley and 22 species of cicadas in Southern Uzbekistan. From the families Aphrophoridae, Cicadellidae, Delphacidae, Dictyopharidae, Cixiidae, Tettigometridae and Issidae. Of these, 54 species are nutritionally related to agricultural plants.

Of the registered species, about 50 species on alfalfa are common, and individual species are in large numbers.

*Anaceratagalliaaciculata* Horv., *A. laevis* Rib., *A. acuteangulata* Zachv., *Batracomorphusirroratus* Lew., *Eupelixcuspidata* F., *Cicadellaviridis* L., *Empoascameridiana* Zachshipunctabibo, live on the alfalfa of irrigated lands throughout the growing season. *Pseudophiapsiusdinatoratus* Sign., *Circuliferopacipennis* Leth., *Macrosteleslaevis* Rib., *M. quadripunctulatus* Kbm., *Aconurellaprolixa* Leth., *Phlepsusintricatus* H.-S., *Psammotettisstriatus* L., *P. dubovskyi* Vilvic. *Laodelphaxstriatellus* Fall., *Toyapropingua* Fieb. and others.

Certain species of cicadas of this group are also often found in foothill areas. Some species, especially the genus *Reptalus* and *Pentastiridius* on alfalfa are more common in spring, while other cicadas accumulate in large numbers in autumn. The number of cicadas in alfalfa fields varies during one season and during different years, but annually, as a rule, there is an increase in their number in alfalfa in early spring and, especially, in autumn. In addition, the number of cicadas in the alfalfa field is gradually increases and reaches a maximum in late summer and autumn.

The cicadas recorded in alfalfa fields are mostly polyphages or oligophages and connected by their nutrition to various agricultural plants. Therefore, alfalfa fields in the autumn-winter period are often the accumulators and reserves of

many types of cicadas, which in the spring of next year settle on various crops.

#### 4. Findings

Our studies have shown that there are 96 species of cicadas in the alfalfa fields of Uzbekistan. Including 82 species in the Ferghana Valley, 64 species in Northern Uzbekistan, 46 species in the Zeravshan Valley and 22 species of cicadas in Southern Uzbekistan. Of these, 54 species are nutritionally related to agricultural plants. The cicadas recorded in alfalfa fields are mostly polyphages or oligophages and are connected by their nutrition to various agricultural plants. These circumstances make it necessary to comprehensively study the cicadas of alfalfa fields.

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#### Author Profile

**Kozhevnikova Alevtina Grigoryevna** is Doctor of Biological Sciences, Professor, Department of Plant Protection, Tashkent State Agrarian University, Tashkent city, Uzbekistan