

# Pest Control Of Forest And Pasture Plants In The Dry Part Of The Aral Sea

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**Abstract.** In 2020-2023, 34 types of pests belonging to 1 class, 3 genera, and 14 families were identified during the study of harmful entomofauna of Haloxylon and other sand-retaining plants planted in the dry bottom of the Aral Sea. The dominant species of these harmful organisms are large and small hump-backed grasshoppers. Imitrin 20% sus.k. is one of the main chemical preparations belonging to different groups against the large saxophone locust. The insecticide was tested at rates of consumption of 2-3-year-old larvae - 0.05 l/ha and against 4-5-year-old larvae - 0.1 l/ha: after 3 hours - 89.2-87.4%, 24- after 95.1-94.0%, after 72 hours - 96.3-95.6% biological efficiency was obtained. From new drugs Comprodor 350 s.k. (0.08 l/ha.), Starin, 30% s.d.g. (0.170 kg/ha.), Alpac 100 EC em.k. (0.1 l/ha.) showed higher biological efficiency respectively. It was recommended to use the above-mentioned preparations in the production in the established norms and terms.

## Keywords:

One of the urgent problems is the creation of a system of protection of desert plants, including Haloxylon, Salsola, Calligonum plants, which are established and naturally multiplied in order to prevent sand and salt landslides caused by strong winds in the dry bottom of the Aral Sea in the countries of Central Asia. As a result, in exchange for preserving healthy trees and bushes in the regions, their seed yield will increase by 50-60%, preparation of quality seeds for the establishment of protection forests in desert areas, and the basis for natural reproduction of trees will be improved. The level of forest cover in the region increases significantly, and as a result, strong salt sand storms are prevented from rising into the air from the seabed [3, 4, 5].

In particular, more than 80 percent of the total area of forestry of the Republic is desert forests. Today, the sanitary condition of desert forests is not satisfactory. More than 60 percent of desert forests are affected by various diseases and pests. There is a risk of disease and pest transmission to the forest saplings that are being planted in the dry bottom of the Aral sea for the purpose of reforestation.

Due to the negative impact of anthropogenic factors on nature, a bioecological tragedy is occurring in many places today. One of them is the drying up of the Aral Sea. As a result of the retreat of the sea water, a typical desert structure consisting of a complex of huge sand-salt landscapes was formed in its place. This desert has been called a newly emerging natural region in Central Asia - "Orolqum". Orolkum is the youngest desert in the world. Its northern part is located in the territory of Kazakhstan, and the southern part is located in the Republic of Uzbekistan (Karakalpakstan). According to the latest data, its area is 5 million hectares, of which about 2.5-3 million hectares belong to the Republic of Karakalpakstan. [3, 4, 5].

The dry area of the Aral Sea presents scientists with an important problem of comprehensive study of its flora and plant cover. The structure and directions of development of new natural complexes, as well as the activity and succession of plants, changes in the landscape, made it necessary to carefully study the dry part of the island. In this regard, it is necessary to study the migration and growth of plants in natural conditions and under the influence of the human factor. Establishing new forests and pastures on the dry seabed in the coastal region provides an opportunity to preserve and develop Biodiversity. As a result of the protection of biological and ecological diversity, the prospects for the protection and use of the flora, the

current problems of protection, preservation and restoration of soil fertility, and the reduction of the negative effects of biotic and abiotic factors on the growth and development of plants will be achieved.

*Locusta migratoria* L., *Dociostaurus maroccanus* Thunb., *Dociostaurus kraussi* Ingen., *Calliptamus turanicus* Tarb. are among the locust species that cause the main damage to agricultural crops in Uzbekistan, while in the Surkhondarya region *Dociostaurus maroccanus* Thunb., *Calliptamus italicus* L., *Ramburiella turcomana* F.-W. it has been studied [2; 35-6].

Among the 41 species identified in Karakalpakstan, *Locusta migratoria* L., *Calliptamus italicus* L. which lives in a group and *C. barbarus* Costa, *Thrinchus campanulatus* F.d.W., *Tetrix tartara* I.Bol., *Heteractis adpersus* Redt. that lives separately and the other species are the main locusts [1; 35-6., 2; 336-6.].

Research on the bioecology of grasshopper species found in reed beds along the rivers and lakes of Uzbekistan and in the Fergana Valley, as well as more than 80 species of grasshoppers adapted to living in forests and rivers, scientific information on the ecological distribution of species is presented [2; 51-58-6.].

Experiments were conducted on the development of agrotechnical measures to combat them based on the study of the distribution of pests, the level of damage, species composition, development, dominant species and their bioecological characteristics in the forest (haloxylon, salsola, calligonum) and pasture plants formed on the dry bottom of the Aral Sea. In the newly established areas of Muynaq, insect samples were collected during our monitoring observations to study the harmful entomofauna of haloxylon and other sand-retaining plants, and in the research conducted in the laboratory of the Forestry Scientific Research Institute, 1 class, 3 genera, 14 families belonged to 34 types of pests were identified (Table 1).

**Table-1**  
**Types of pests and their distribution in forest and pasture plants established in the dry bottom of the Aral Sea (Muynaq, 2020-2023.)**

№	Species of pests	Appearance
<b>Genus: Orthoptera</b>		
<b>Family: Acridoidea</b>		
1	<i>Dericorus albidula</i> Serv.	+++
2	<i>Dericorus annulata roseipennis</i> Redt.	++
<b>Genus: Coleoptera</b>		
<b>Family: Scarabaeidae</b>		
3	<i>Lethrus rosmarus</i> Ball.	+
4	<i>Oryctes punctipennis punctipennis</i> Motsch.	+
<b>Family: Elateridae</b>		
5	<i>Agriotes meticulosus</i> Cand.	++
6	<i>Agriotes caspicus</i> Heyd.	+
7	<i>Aeoloides griseus</i> Germ.	+
8	<i>Drasterius bimaculatus</i> Rossi.	+
9	<i>Melanotus acuminatus</i> Rtt.	+
10	<i>Cardiophorus longulus</i> Er.	+
<b>Family: Buprestidae</b>		
11	<i>Lampetis argentata</i> Mnnh.	+
12	<i>Capnodis excisa</i> Men.	+
<b>Family: Tenebrionidae</b>		
13	<i>Tentyria gigas</i> Fald.	+
14	<i>Trigonoscelis nodosa</i> Fisch.	+
15	<i>Ocnera pilicollis</i> Fald.	+
16	<i>Pisterotarsa gigantea</i> F.-W.	+
17	<i>Blaps heophila</i> F.-W.	+

18	<i>Blaps parvicollis subcordata</i> Seidl.	+
<b>Family: Meloidae</b>		
19	<i>Mylabris frolovi</i> Germ.	
20	<i>Mylabris quadripunctata</i> L.	
<b>Family: Chrysomelidae</b>		
21	<i>Theone costipennis</i> Kirsch.	+
<b>Family: Curculionidae</b>		
22	<i>Megamecus variegatus</i> Gebl.	+
23	<i>Chromosomus fischeri</i> Fahrs.	+
24	Тукли барид ( <i>Baris memnonia</i> Boh.)	+
<b>Genus: Lepidoptera</b>		
<b>Family : Zygaenidae</b>		
26	<i>Zygaena truchmena</i> Ev.	+
<b>Family: Noctuidae</b>		
27	<i>Cucullia boryphora</i> F.-W.	+
28	<i>Aleucanitis flexuosa</i> Men.	+
<b>Family: Arctiidae</b>		
29	<i>Phragmatobia fuliginosa</i> L.	+
30	<i>Arctia caja</i> L.	+
<b>Family: Pieridae</b>		
31	<i>Colias erate</i> Esp.	+
32	<i>Zegris fausti</i> Chr.	+
<b>Family: Lycaenidae</b>		
33	<i>Lycaena icarus</i> Rtt.	+
<b>Family: Nymphalidae</b>		
34	<i>Pyrameis cardui</i> L.	+

As a result of the research, 34 types of pests identified during the monitoring of harmful entomofauna of haloxylon and other sand-retaining plants in the forests established on the dry bottom of the Aral Sea belong to 1 class, 3 genera, 14 families, among which, when analyzing the dominant species, it was found that *D.albidula* and *D.annulata roseipennis* are the species causing great damage to the haloxylon.

Recommendations:

1. 34 types of pests belonging to 1 class, 3 genera, 14 families were identified during the monitoring conducted on the study of harmful entomofauna of haloxylon and other sand-retaining plants in the dry bottom of the Aral Sea. The dominant species of these harmful organisms are large and small hump-backed grasshoppers.

2. In 2020-2023, modern chemical preparations against the main harmful species of locusts found in the dry bottom of the Aral Sea and its territories were tested for the first time at different rates, and their biological effectiveness was determined. Imitrin 20% sus.k insecticide, which consists of a mixture of chemical preparations belonging to different groups against large haloxylon hump-backed locust, is used for 2-3-year-old larvae of locusts - 0.05 l/ha and against 4-5-year-old larvae - 0.1 l/ha. tested in standards. After 3 hours - 89.2-87.4%, after 24 hours - 95.1-94.0%, after 72 hours - 96.3-95.6% biological efficiency was obtained. New preparations include Comprodor, 350 s.k (0.08 l/ha), Starin, 30% (0.170 kg/ha), Alpac 100 EC em.k. (0.1 l/ha) correspondingly higher biological efficiency was achieved. It was recommended to use the above-mentioned preparations in the production in the established norms and terms.

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