

MONITORING OF LOCUST SPECIES THAT CAUSE CROWDS OF HARVEST IN UZBEKISTAN

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ABSTARCT

Providing the population with food products in our republic is included in the state program. is one of the most urgent tasks of today.

One of the main reasons for the increase of harmful locusts in various regions of our republic and in some cases they fly to agricultural crops is the increase in the number of livestock in the existing pastures, the expansion of the area of agricultural crops, and the historical foci of locusts. due to the establishment of vegetable, sugarcane crops and intensive orchards in nearby fields, harmful locusts are causing migration to agricultural crops.

Despite the fact that the fight against harmful locusts in our republic is carried out in their historically widespread foci, in some cases, they move to newly established intensive gardens and other agricultural crops and cause damage.

Keywords: infestation, harmful locusts, rest period, control, border areas, Moroccan locust, Italian and Asian locusts, intensive garden, field.

O'ZBEKISTONDA CHIGIRTKALARNING TO'DA HOSIL QILUVCHI ZARARLI TURLARINING MONITORINGI

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ANNOTATSIYA

Respublikamizda aholini oziq-ovqat mahsuloti bilan ta'minlash davlat dasturiga kiritilgan bo'lib, bu borada aholini go'sht mahsuloti bilan ta'minlash uchun respublikamizda o'simliklarni zararkunandalardan himoya qilish maqsadida tog' oldi va cho'l hududlarda yaylov ekinlarini zararli chigirtkalardan himoya qilish bugungi kunning eng asosiy dolzarb vazifalaridan biri hisoblanadi.

Respublikamizning turli hududlarida zararli chigirtkalarining yoppasiga ko'payib borayotganligi va ayrim hollarda qishloq xo'jalik ekinlariga uchib o'tayotganligining asosiy sabablaridan biri mavjud bo'lgan yaylovlarda chorva mollarining soni ortib borishi, qishloq xo'jalik ekinlar maydoni kengayib borishidan tashqari chigirtkalarining tarixiy o'choqlariga yaqin bo'lgan maydonlarda sabzavot, poliz ekinlari va intensiv bog'larning barpo bo'layotganligi sababli zararli chigirtkalar qishloq xo'jalik ekinlariga ko'chib o'tishiga sabab bo'lmoqda.

Respublikamizda zararli chigirtkalarga qarshi kurash ularning tarixiy tarqalgan o'choqlarida olib borilishiga qaramasdan, ayrim hollarda yangi barpo etilgan intensiv bog'lar va boshqa qishloq xo'jalik ekinlari ekilgan maydonlarga ko'chib o'tib zarar keltirmoqda.

Kalit so'zlar: zararlanish, zararli chigirtkalar, tinim davri, qarshi kurash, chegara hududlar, marokash chigirtkasi, italiya va osiyo chigirtkalari, intensiv bog', maydon.

МОНИТОРИНГ ВЫЗЫВАЮЩИХ СТАДНЫХ ВИДОВ САРАНЧОВ В УЗБЕКИСТАНЕ

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АННОТАЦИЯ

Обеспечение населения продовольственными товарами в нашей республике включено в государственную программу, является одной из актуальнейших задач современности.

Одной из основных причин увеличения численности вредоносной саранчи в различных районах нашей республики и в ряде случаев их залета на сельскохозяйственные культуры является увеличение поголовья скота на существующих пастбищах, расширение площадей сельскохозяйственных культур, и исторические очаги саранчи. Из-за выращивания овощей, сахарного тростника и интенсивных садов в близлежащих районах вредоносная саранча вызывает миграцию на сельскохозяйственные культуры.

Несмотря на то, что борьба с вредоносными саранчовыми в нашей республике ведется в их исторически распространенных очагах, в ряде случаев они переселяются во вновь созданные интенсивные сады и другие сельскохозяйственные культуры и наносят ущерб.

Ключевые слова: заражение, вредоносная саранча, период покоя, борьба, пограничные районы, марокканский саранча, итальянская и азиатская саранча, интенсивный сад, поле.

INTRODUCTION

One of the main reasons for the increase of harmful locusts in various regions of our republic and in some cases they fly to agricultural crops is the increase in the number of livestock in the existing pastures, the expansion of the area of agricultural crops, and the historical foci of locusts. Due to the establishment of vegetables, sugarcane crops and intensive orchards in nearby areas, harmful locusts migrate to agricultural crops.

Despite the fact that the fight against harmful locusts in our republic is carried out in their historically widespread foci, in some cases, they move to newly established intensive gardens and other agricultural crops and cause damage. In the inter-state border areas, harmful locusts move from neighboring countries and cause damage to agricultural crops in areas close to the border [2,4].

One of the main reasons for such situations is that due to the severe economic situation of some neighboring countries, they are not able to fully carry out the fight against harmful locusts.

In particular, in the Fergana district of the Fergana region of our Republic, in the regions of Chortoq and Uychi districts of the Namangan region close to the border, locusts from the Kyrgyz Republic have been observed [6].

Such situations are also observed in the border regions of Surkhandarya, Kashkadarya, Jizzakh, and Tashkent regions, which are close to the countries of Tajikistan, Turkmenistan, and Kazakhstan.

Currently, more than 100 chemical preparations registered by the "State Chemical Commission" are recommended to be used against harmful locusts in Uzbekistan. Most of the approved preparations belong to pyrethroid compounds, which act on locusts in a short period of time.

The resistance of Moroccan, Italian and Asian locusts to chemical preparations was studied in the conditions of Uzbekistan, and a number of modern pyrethroids, neonicotinoids, phenylpyrazole, benzoylurea preparations against these pests were tested, their effectiveness was determined and they were recommended for use in practice [1,2,5].

RESEARCH METHODS

In 2021-2022, our scientific research was carried out in the regions of Kashkadarya and Surkhandarya regions and in the laboratory "Combating against harmful organisms of pasture, fodder, oilseed and medicinal plants" of O'KvHITI.

In the conducted laboratory and field experiments, the main pest in our Republic and which makes up more than 60-70% of the total number of locusts is Moroccan-*D. maroccanus*, oasis (Italy)-*C. italicus*, Asia- *L. migratoria*, Qir (Turon)-*C. turanicus* and was carried out based on the use of new methods and tools against the main harmful species of non-swarming (local) locusts.

Surkhandarya region is located in the south-east of the Republic, in the Surkhan-Sherabad valley. The terrain consists of mountains and plains, sloping and widening from north to south. The plain through which Surkhandarya and Sherobodarya flows is surrounded by the high Hisar ridge and its branches (Boysuntog, Kohitangtog, Bobotog) from the north-west and east.

In the mountain zone and hills, mainly grain is grown, summer pasture for livestock. The climate of the plain is dry subtropical. Summer is hot and long, winter is warm and short. The hottest air temperature in Uzbekistan is also observed here. It rains 130-140 mm annually in the southern plains of the province, and 445-625 mm on the slopes of the Hisar Mountains.

Most of the precipitation falls in winter and spring. West, south-west and north-east winds blow a lot.

The territory of Kashkadarya region mainly includes the Kashkadarya basin; It is surrounded by Zarafshan and Hisar mountains from the north-east and south-east. Hills occupy the space between the mountains and the plains. A large part of the plain consists of the Karshi desert, bordered by the Sandikli and Kyzylkum deserts in the west.

The climate is continental. Winter is relatively mild. Summer is long (155-160 days), hot, dry. The average temperature in January is from 0.2°C to 1.9°C, in July it is 28°-29.5°C. The highest temperature is 45°C. The lowest temperature is -20°C. 290-300 mm of rain falls in the plains, 520-550 mm in the hills, and 550-650 mm in the mountains. Precipitation falls mainly in spring and winter, and warm winds blow in summer. The vegetation period is 290-300 days in the plains.

M.E. in determining the types of egg sacs of grasshoppers. Methodical manual of Chernyakhovsky [9], calculating the density of the number of locusts, collecting samples in areas where locusts are common in spring and summer, traditional Ye.P. Siplenkov, M.I. Rashidov et al., F.A. Gapparov et al., using the formula in the method [4,3,1,2].

$$D = \frac{A \times 10000}{B \times V}$$

Here: D- the average number of locusts per hectare, units;

A- total number of locusts encountered, units;

B- total length of traveled routes, m;

V- width of the field of view, m;

RESEARCH RESULTS

Our observational studies are carried out in Surkhandarya, Kashkadarya, Jizzakh, Tashkent, Fergana, Andijan, Namangan regions of our Republic 200 m above sea level. it was carried out in the mountain and sub-mountain pastures and transboundary areas above the altitude. (Figure 1).

As a result of our research on locust species, 34 species of locusts are found in these areas in a low, moderate, high and dense manner. (Table 1).



Figure 1. Autumn surveillence monitoring in transboundary areas it will be necessary to do.

In this *Acrida oxycephala* Pall., *Dociostaurus maroccanus* Thunb., *D. kraussi* Ingen., *D.kraussi nigrogeniculatus* L., *D. tartarus* Stshelk., *Ramburiella turcomana* F.-W., *Aiolopus thalassinus* F., *Oedaleus decorus* Germ., *Sphingoderus carinatus* Sauss., *Calliptamus italicus* L., *C. turanicus* Tarb [8,10].

Table 1 Species composition of swarm-forming and other harmful locusts found in mountain and sub-mountain pastures of transboundary regions

| Types of locusts | Locusts scattered in mountain stations | | |
|--|--|--------------|---|
| | Mountainous regions | cross-border | He took a mountain mountain range transboundary areas |
| 1 | 2 | | 3 |
| The family <i>Acrididae</i> | | | |
| 1. <i>Acrida oxycephala</i> Pall. | +++ | | +++ |
| 2. <i>Euprepocnemis unicolor</i> Serg. Tarb. | ++ | | ++ |
| 3. <i>Dociostaurus maroccanus</i> Thunb. | (T) +++ | | (T) +++ |
| 4. <i>D. kraussi</i> Ingen. | +++ | | ++ |
| 5. <i>D. kraussi nigrogeniculatus</i> L. | +++ | | ++ |
| 6. <i>D. tartarus</i> Stchelk. | +++ | | + |
| 7. <i>Duroniella kalmyka</i> Ad. | ++ | | ++ |

| | | |
|---|---------|---------|
| 8. <i>D. gracilis</i> Uv. | ++ | +++ |
| 9. <i>Ramburiella turcomana</i> F.-W. | +++ | ++ |
| 10. <i>Aiolopus oxianus</i> Uv. | ++ | ++ |
| 11. <i>A. thalassinus</i> F. | +++ | +++ |
| 12. <i>Oedaleus decorus</i> Germ. | +++ | ++ |
| 13. <i>O. senegalensis</i> Kr. | ++ | + |
| 14. <i>Sphingonotus maculatus</i> Uv. | ++ | ++ |
| 15. <i>S. nebulosus</i> F.d.W. | ++ | + |
| 16. <i>S. rubescens</i> Walk. | ++ | ++ |
| 17. <i>S. satrapes</i> Sauss. | ++ | + |
| 18. <i>Pyrgodera armata</i> F.d.W. | ++ | + |
| 19. <i>Sphingoderus carinatus</i> Sauss. | ++ | +++ |
| The younger family <i>Catantopinae</i> | | |
| 20. <i>Calliptamus italicus</i> L. | (T) +++ | (T) +++ |
| 21. <i>C. turanicus</i> Tarb. | +++ | +++ |
| 22. <i>C. barbarus</i> Costa. | +++ | +++ |
| 23. <i>Anacridium aegipitium</i> L. | +++ | ++ |
| 24. <i>Tropidopola turanica</i> Uv. | ++ | ++ |
| 25. <i>Heteracris adpersus</i> Redt. | +++ | +++ |
| 26. <i>H. littoralis</i> Br.-W. | +++ | ++ |
| The family <i>Pyrgomorphidae</i> | | |
| 27. <i>Pyrgomorpha bispinosa deserti</i> B.-Bien. Serg. | +++ | +++ |
| The younger family <i>Oedipodinae</i> | | |
| 28. <i>Mioscirtus wagneri</i> Sauss. | ++ | ++ |
| 29. <i>Acrotylus insubricus insubricus</i> Walk. | +++ | +++ |
| 30. <i>Helioscirtus moseri</i> Sauss. | ++ | |
| 31. <i>Leptopternis gracilis</i> Ev. | + | ++ |
| 32. <i>L. iliensis</i> Uv. | + | + |
| The family <i>Pamphagidae</i> | | |
| 33. <i>Pezotmethis tartarus</i> Sauss. | ++ | +++ |
| 34. <i>Thrinchus desertus</i> B.-Bien. | +++ | + |

Izoh 1: + - rare; ++ - met on average; +++ - widely distributed; (t)+++ – scattered (cluster-forming) species.

CONCLUSIONS

C. barbarus Costa., *Anacridium aegipitium* L., *H. littoralis* Br.-W., *Pyrgomorpha bispinosa deserti* B.-Bien. Serg., *Acrotylus insubricus insubricus* Walk., *Pezotmethis tartarus* Sauss., *Thrinchus desertus* B.-Bien., species are widely distributed in mountain and sub-mountain pastures *Dociostaurus maroccanus* Thunb., va *Calliptamus italicus* L. It was found that locusts are swarm-forming species and are widely distributed.

Eupreopcnemis unicolor Serg. Tarb., *Duroniella kalmyka* Ad., *D. gracilis* Uv., *Aiolopus oxianus* Uv., *O. senegalensis* Kr., *Sphingonotus maculatus* Uv., *S. nebulosus* F.d.W., *S. rubescens* Walk., *S. satrapes* Sauss., *Pyrgodera armata* F.d.W., *Tropidopola turanica* Uv., *Mioscirtus wagneri* Sauss., *Helioscirtus moseri* Sauss., *Leptopternis gracilis* Ev., *L. iliensis* Uv., species were found to be rare or moderate in mountain and sub-mountain pastures [7,9].

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