



BIOTOPE FEATURES OF OILSEED CROPS, BIOECOLOGY OF DEVELOPMENT OF PEST SPECIES, THEIR DAMAGE

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ANNOTATION

Among the types of agricultural crops of Karakalpakstan, sunflower, sesame, soybean, safflower species, which have been growing in the area of cultivation in recent years, are spreading in the biotope, and the types of adapted and secondary pests that damage crops, bioecology of development, dynamics, damage the results of research aimed at determining the contribution of types of external factors that affect the level are included.

KEYWORDS: Oil crops, agroclimate, harmful factors, pests, harmfulness, biology, ecology, dynamics, species, distribution areas, entomophages.

JUSTIFICATION OF THE RELEVANCE OF THE TOPIC

The microclimate of the agrobiocenosis of Karakalpakstan is an extra-arid region with cold winters and hot summers, the maximum air temperature rising to 40-45 °C, the average relative humidity of the air 20-30%, and the minimum level falling to 12-20%. As a result of changes in the structure of agricultural farming in recent years, the work has started on the business plans of planting sunflower, sesame, flax plants, which were planted in very small areas in the region, and from unplanted varieties planting drought-resistant varieties of soybean, safflower and increasing the cultivated area. In this way, in the last two years, work has been carried out to increase the area of crops intended for obtaining such oil to 10,000 hectares and to increase the yield.

To fulfil the assigned tasks, it was noted that the results of the research conducted in the fields of crops, the importance of pests, diseases and wild grass among the harmful factors considered as the main elements of biocenosis. The main thing is that in the biotopes of some types of plants, it was found that most types of pests, including adapted species, which are widespread in the region and cause great damage to the types of agricultural crops, appear and develop. Because most of these are fed with vegetative, generative bodies of the plant adversely affecting growth and harvest, it became known that the expected results are not being obtained from the countermeasures to prevent the reduction of the quality and quantity of the harvest.

To solve such a problem that has arisen in the fields of oilseed crops in the region, it is necessary to identify the types of pests that spread in the biotope, to correctly

determine the characteristics of bioecological development, taking into account the changes in abiotic factors in recent years, and to develop and produce countermeasures on a scientific basis and their implementation is a pressing issue for the region today.

METHODS USED FOR RESEARCH

In the conditions of Karakalpakstan, research was carried out in the fields where the types of oilseed crops, their varieties were planted and agro-technical methods corresponding to the agro-climate of the region were used for harvesting [Shamshetov et al., 2003; Ozizov, 2008; Amanov et al., 2017]. The methods of B.P. Adashkevich [1983], Sh.T. Khojaev [2015] was used to determine the types of pests in the biotope and their entomophagous species, V.I. Tansky [1988] – to determine their degree of damage, conducting experiments were carried out by the methods of B.A. Dospekhov [1986].

RESEARCH RESULTS

To obtain oil from the fields of agricultural crops in the agrobiocenosis of Karakalpakstan, sunflower (*Helianthus annuus* L.), sesame (*Ovozamum indicum* L.), soybean (*Glycine hispida* (Mnch) Max.) safflower (*Catthamus tinctorius* L.), quick-ripening and drought-resistant varieties of flax (linacea) are planted in the main areas, it was determined that agrotechnical methods were used taking into account the soil and climatic conditions of the area. The experiments were carried out on the basis of scientific research where it was found that among these types of pests sunflower damaging pests include: turnip moth (*Agrotis Segetum* Schiff.), silver Y (*Phytometra gamma* L.), agapanthia dahli (*Agapanthia dahli* Richt.), types of aphids (Aphidodea), spider mite (*Tetranychus urticae* Koch.), alfalfa plant bug (*Adelphocorus lineolatus* Goeze.), lygus (*Lygus pratensis* L.), Eurasian sunflower moth



(*Homoeosoma nebulella* Hb.); in addition to above-mentioned pests of soybean include: cotton bollworm (*Heliothis armigera* Hb.), beet armyworm (*Spodoptera exigua* Hb.); in safflower - black beet weevil (*Psalidium makillosum* F.), flax moth (*Chloridea peltigera* Schiff), safflower aphid (*Macrosiphum jaceae* L.), safflower root aphid (*Brachyunguis anuraphoides* Nev.), mesogroicus (*Mesogroicus petraeus* Faust.), *larinus* (*Larinus syriacus* Gyll.); in sesame fields – *acmaeodera* (*Acmaeodera ballioni* Gangl.), and several types of locusts (Khodjaev, 2015; Khodjaev, Kholmuradov, 2009; Toraniyazov et al. 2018).

The main types of the specified pests related to the feeding of oilseed crops according to the degree of harmfulness are determined, research was conducted to determine the damage caused to the phases of plant varieties.

The results are presented in Table 1. It can be seen that the microclimate in the biotope proves to be favorable in terms of the types of pests found in the biotopes of oilseed crops of the northern districts of the agrobiocenosis of Karakalpakstan. From May to the end of August, due to the spread of the pest, the turnip moth was found in the isolated fields, it was found that the pest increased to 0.6-1.2 individuals per square meter of sunflower fields in May and damaged 18,6-34,8% of seedlings. It was noted that larvae with an exclamation mark increased in sesame and soybean fields, gnawed the real leaves and damaged 12.6-27.4% of seedlings.

It was found out that the type of cotton bollworm is the main pest of soybeans, causing damage to 23,8-36,4% of the examined plants in July and August and causing some damage to the crop.



Table 1
Types of pests that appear in the biotope of oilseed crops, the degree of harmfulness they cause
Karakalpakstan, Shimbay, Kegeyli, Nukus districts, 2022-2023 yy.

Types of pests	Sunflower				Sesame				Soybean				Safflower				Flax			
	5	6	7	8	5	6	7	8	5	6	7	8	5	6	7	8	5	6	7	8
Agrotis segetum Den. et Schif.	+	+++	+	-	-	+	++	-	+	++	+	-	+	+	-	-	-	+	+	-
Agrotis exclamatori L.	+	+++	+	-	-	+	++	-	+	++	+	-	+	+	-	-	-	+	+	-
Heliiothis armigera Hb	-	-	-	-	-	-	-	-	-	+	+++	+++	-	-	-	-	-	-	-	-
Phytometra gamma L.	-	+	+	++	-	+	+	++	-	+	+	++	-	+	+	++	-	+	+	++
Spodoptera exigua Hb	+	+++	+	-	+	+++	+	-	+	++	+	-	+	++	+	-	+	++	+	-
Aphididae	-	-	-	+	-	-	+	++	-	-	+	++	-	+	+	+	-	-	+	+
Tetranychus urticae Koch.)	+	+	++	++	-	-	+	++	-	-	+	++	-	-	+	++	-	-	+	++
Miridae	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++	+	+	+	++
Sitona													-	+	++	++	-	+	++	++
Clon cerambycinus Sem	-	-	+	+	-	-	+	+	-	-	+	+	-	-	+	+	-	-	+	+
Acrididae	-	-	-	+	-	-	++	+	-	+	+	+	-	+	++	+	-	+	++	+
Homoeosoma nebulella Hb	-	+	++	++	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Entomophages	-	+	+	++	+	-	+	+	+	++	-	+	+	+	++	-	+	+	+	++

Conditional signs: -did not appear; - -few, +-average, +++-appeared in a great amount.



It was found that the silver Y, which is widespread in oilseeds, fed on young leaves, and the damage caused by beet armyworms, which appeared in May and June, reached a very high level. It was noted that 67.1-84.3% of the leaves of seedlings were damaged and the crops were completely destroyed in places where on average 8.5-14.6 worms were found in 100 plants of sesame fields.

In the fields of oilseeds, aphids of acacia and vegetable aphid have sufficient development dynamics, and in sesame, safflower and soybean, some do not resemble the identified varieties in terms of morphological characteristics, it became known that there is a need to carry out systematic work on this.

Among the pests, the spider mite species has expanded its range since the second half of the vegetation period, in some fields, it was noted that the number of leaves with increased physiological processes reached 41.3-54.8%, and it was known that the level of harmfulness was high.

In addition, many types of locusts around the fields continue to spread in the fields of oilseeds, and in July, it was noted that the leaves of the plants were damaged by a strange attack in the fields of sesame, safflower, and flax.

The species of entomophages increased along with the mentioned pests in the fields of oil crops, and the species that appeared in the fields of sunflower, sesame and other crops from June developed until the end of the vegetation period, proving that it is the most favorable biotic factor in reducing the number of pests.

CONCLUSION

In the conditions of Karakalpakstan, the cultivation area has increased in recent years, and the cultivation of sunflower, sesame, soybean, sorghum, and flax species, which are being cultivated as the main agricultural crops, is because the microclimates and phases of plants that appear in biotopes are valuable nutrients, it became known that many types of pests accumulate and live as the main element of the biocenosis. Among them, the gnawing moths cut off the seedlings of the plant, cotton bollworms damage the fruits of the soybeans, beet armyworms and others, and the locusts gnaw the leaves, species of aphids, spider mites, legcuffs cause damage by sucking food elements. It was noted that the development of the Eurasian sunflower moth in sunflower leads to the death of the main crop. It has been confirmed by the results of scientific research that oilseed fields of the mentioned species are highly harmful due to favorable availability of abiotic and biotic factors.

SUGGESTIONS FOR PRODUCTION

In order to reduce the level of damage caused by pests in oilseed crops, it is necessary to determine the characteristics of growth and development according to the external environmental factors of each crop type. It is necessary to determine the features of bioecological

development, dynamics, and factors favorable to the level of harmfulness of varieties that are distributed in the conditions of the region, including those that have become the main biotic factor as adapted pests of oil crops. It is necessary to determine the types of entomophages that multiply in the fields along with pests, determine the factors that positively affect the bioecology of development, and develop ways of using their livelihood needs to carry out biological countermeasures on a scientific basis. It became known that it is necessary to establish the phenological development periods of the pests that appear in the field related to plant types, varieties, planting periods, apply agrotechnical, biological and chemical methods against pests, develop them, and create a scientific basis for the control system.

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