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Bioecology of dominant pest species on ephemeral-ephemeroid pastures.

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Annotation: The article highlights the results of experiments on researching the bioecological development of dominant pest species in pastures of ephemeral-ephemeroid vegetation in the southern and central regions of the Republic of Uzbekistan.

Key words: Pastures, ephemeral-ephemeroid, plants, dominant, bioecology, harmfulness, Moroccan locust, kravchik beetle, case cutter, caterpillars.

Introduction.

The total area of ephemeral and ephemeroid pastures in the country is more than 1.5 million hectares [2]. In Uzbekistan, this type of pasture is distributed in some areas of Surkhandarya, Kashkadarya, Samarkand, Jizzakh and Navoi regions [5]. The peculiarity of this type is that the basis of its vegetation is the ephemeral and ephemeroid life forms of plant groups include Carex phusodes, perennial species such as Poa bulbosa. Their root system forms a thick layer of grass on the surface of the soil. In addition to perennial grasses (ephemeroid), this type of pasture includes ephemeral plant species such as Vromus tectorum, Eremopyrum buonapartis, Trigontlla srr. filifoleum) and others, which is an important, rich, vitamin-rich food source in early spring and summer. Another important feature of ephemeral and ephemeroid pastures is that this type of pasture has a relatively high vegetation composition and is mainly coarse-grained. thapsoides). The importance of this group of plants is that they serve as a source of raw hay for winter use [2, 6].

Research methods.

Scientific research is widely used in entomology and agricultural entomology through observations, comparisons and experiments.
In the work, phenological and faunistic studies were conducted on the basis of methodological manuals by V.F. Pali [3] and A. Kulmamatov [7].

Results of research:

Many phytophagous insects affect the development and reproduction of ephemeral and ephemeroid meadow plants. However, phytophagous pests are predominant in this type of pastures, such as locusts, beetles, field nightshades and desert sacks.

During our research, **Kravchik beetles** were planted in the pastures of Surkhandarya, Kashkadarya, Samarkand, Navoi and Jizzakh regions of the southern and central regions of Uzbekistan.
The damage caused by Kravchik beetles is almost the same, all of them feed on different plants. The damage is also great due to the fact that the Kugart claw, small claw, bumpy claw, black, bronze and dotted claws are widespread and numerous.

On dry lands as well as on the edges of arable lands adjacent to the desert, sometimes crops on newly developed lands are slightly damaged by beetles.

In particular, the species of small-leaved (Lethrus pygmaeusBall) and black-leaved (L. rosmarus Ball) species are found in the Altynsay district of Surkhandarya region, Dehkanabad and Guzar districts of Kashkadarya region, Nurata district of Navoi region, Jorish district of Jizzakh region were noted.

Kravchik beetles and their pests were discovered in the pastures of Surkhandarya region in 1999, when they were forced to use chemicals to protect dry crops. These pests have been causing significant economic

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damage to pastures and rain-fed crops in the "Katta Lalmi" area of Dehkanabad district of Kashkadarya region since 2015. [4]

Kravchik causes a lot of damage to various crops, especially wheat, barley, oats and flax. One beetle can destroy the grass in the area up to 1.5-2 m from its nest. The adult beetle bites the grass of various crops, and gnaws at some of the branches and leaves of the Mahsar plant, even the strongest ones. Kravchik beetles have short and thick bodies; The anterior part of the head and back is very large, and the next two segments of the abdomen and chest are disproportionately small, so it is sometimes called a clavicle. Kravchik's wings have merged along the seam and cannot be opened; the wing is completely absent. The upper jaws (especially in the back) are very developed and protrude slightly below; In females of some species of kravchik, a long growth protrudes from the upper jaw and stands upright. The whiskers are obliquely conical; its first joint is cup-shaped, and the second joint is semi-spherical and enters the third joint. The foot is wide and toothed, suitable for digging. The seeds are whitish or white, oval.

The larva is white and thick; large leg, conical. The anus is round in shape, with radiant ridges on each side, and the shape of the anus is important for the identification of larvae belonging to the family of plate-bearded beetles (Scarabaeidae), which also include crustaceans

Image 1. Small crab beetles and larvae (Guzor fog, Pachkamar plot, 2017).

The dome spreads freely, pale white or yellowish, slightly darkened before turning into a beetle.

Kravchiks overwinter in the adult beetle stage, after becoming a beetle (without going outside the dome). This beetle emerges in the early spring and makes a long nest by choosing a hard ground with a lot of greenery nearby. In some species of maggots, the males are separate and the females are separate. The depth and structure of the needles vary depending on the type of cracks. The female squirrel makes oval-shaped cells at the edge of the nest and lays one egg in a separate chamber; then cover the chamber with a soil stopper. The cells are filled with stems, leaves and branches.

Kravchik eats a wide variety of plants, but prefers succulents; does not like rough, hardened plants; they mainly damage the newly emerged grasses and young plants. Kravchiks are considered to be spring pests. The larvae that hatch out of the egg hatch and hatch into the eggs prepared by their mother, which is enough for them to fully develop. The larvae "cement" their cell walls with their waste, and the waste does not contaminate food quickly.

The larvae complete their development by making a glass out of their own waste, and by combining it with the juice extracted from the salivary glands into the glass, they set up the soil, which is inside the cocoon. In the fall, weavers emerge from the dome, and in the same way (on the way out of the pylassi), they winter in the soil.

Because all species of weavers live dry and here, the damage from it is greater in the grasslands and on the edges of the fields, and in the areas where the beetles were released last year.

Desert sack - Amictoides plotnikovi Kozh. It is found in ephemeral, ephemeroid meadow plants in the foothills of Mount Bobotag and Nurata in Uzbekistan.

The adult butterflies of the desert sagebrush are characterized by a pronounced sexual dimorphism. The male butterfly has wingspan of about 22 mm between the tips of the wings; its wings are gray, its belly

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and chest are hard, its legs are strong, and its mustache is feathery. The female butterfly has no wings, no legs, and its body is baggy and hairless. The female butterfly often stays still in the cracked shell. The seeds are round and up to 1.5 mm in diameter.

The larvae are up to 2.5 cm long; the color of the body is light brown; the upper side of the head and chest are spotted (black and white), the lower side is dark. There is a blackened thyroid gland in the last part of the abdomen. The worm lives in a sheath of dried leaves; the inside of the sheath is wrapped with cobwebs. The length of the dome is up to 12 mm.

The desert sack spends the winter in the shell during the larval stage. The worms begin to feed on desert grasses in the spring, in late April and May, and sometimes on crops.

The worm drags only the chest part of the body out of the sheath and drags the sheath with it. In June, growth and feeding begin, at which time the worm digs a hole 2 cm deep in the desert soil to form a fungus and settles on it (leaving its shell on top). Spider webs are tied to the bottom and walls of the inn; By August, the worms are turning into mushrooms.

In late August, the butterflies emerge from the dome. Male butterflies fertilize the female butterflies that emerge from the shell. However, unfertilized female butterflies can also lay eggs. In the fall, the worms hatch from the eggs, feed on them and begin to wrap themselves in a sheath. The desert sack gives one joint a year.

The Moroccan locust (Dociostaurus maroccanus Thunb.) Is named after the Moroccan country and was first identified as a species in the Atlas Mountains, while the most widespread locusts in Morocco are in Central Asia (Turkmenistan, Afghanistan, Kyrgyzstan, Tajikistan) and partly in southern Kazakhstan)[1].
Unlike other harmful locusts, the Moroccan locust lays its eggs on uncultivated, hard ground. The Moroccan locust is widespread mainly in the steppes adjacent to the mountains, where annual grasses grow, especially in the meadows and meadows. Most Moroccan locusts then lay their eggs in places where brown-tailed deer are common.

It is the most dangerous pest of agricultural crops, including cotton in some years, and after the formation of wings, thousands, and in some years, millions of galaxies (flocks) fly to small crops.

The adult Moroccan locust has a yellowish-gray color, the shoulder is cut in the middle, has an X-shaped liver mark on the shoulder and black spots on the sides. The upper wings and wings are slightly protruding from the tip of the abdomen. Jumper has three black spots on his legs and red legs. Females 30-42 mm, males 25-35 mm (Image 2a).

Image 2. Moroccan locust: a-imago, b-jugs.

They place their pots on very hard hills, where the sun shines well and does not collect water, and never lay eggs on soft and soft soils, wet and perennial crops. The spawning season of Moroccan locusts in Surkhandarya lasts from late May to late June. Laying time lasts from 7 to 10 o'clock in the morning, after which the fertilization continues. At 12 o'clock, locust swarms cover the fields and feed continuously, and in the evening they fly to the places where they lay their eggs. This condition lasts from 10 to 25 days, and each

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female locust manages to lay 2-3 pots under the ground. Males of locusts begin 5-7 days earlier than females and are completely extinct in the first ten days of July.

The ovaries are 24-50 mm long and 4-6 mm thick. In the lower part of the jar, 18-42 eggs are filled in four rows (Fig. 2b). The number of eggs in Moroccan locust pots and their size do not vary from year to year, depending on the weather and the amount of vegetation in the pastures.

The egg-laying period of locust larvae occurs in late March and early April. This condition can vary depending on the structure of the soil, hot or cold weather, as well as precipitation.

The emergence of larvae from the jar begins when the surface temperature reaches +10 - + 12 ° C, and within 40 minutes all the larvae hatch from eggs. Under the influence of sunlight, the larvae change from white to black, begin to feed on soft grasses and form small flocks and nests. The daily life of the Moroccan locust is similar to other species, that is, it depends on the weather, whether the wind is strong or weak, and the humidity. The larvae of the small Moroccan locust grow in the upper part of the plant and on the ground. After a slight warming of the surface, after 20-30 minutes in the upper layer of the earth, clinging to the open ground and rocks, where the sunlight is as good as possible (Fig. 3a), warms for another 1-2 hours, the upper part of the earth + 20 ° C, temperature At +30 ° C, it moves and begins to feed on the surrounding vegetation. This movement is temporarily stopped when the temperature exceeds 41oC, during which they again accumulate on the tops of plants or in the pits of the soil to protect themselves from the heat and begin to feed at 17-18 hours, when it cools down a bit.

When the temperature is 25-30 ° C, they prepare for another night's sleep. When the weather is cloudy and it is raining, they flock to the plants during the day. On such days they are not fed. Awareness of the above cases is very important in determining the timing of measures to combat them.

The larvae of the Moroccan locust travel 500 km to 5 km a day after forming large swarms. forming a long band in the area of the plant and moving according to the number and thickness of the plants (Fig. 3b). The length of such strips can be 15-20 km in some years (for example, in 1982, 1984, 1995, 2006 in Zharkurgan, Kumkurgan, Shurchi, Sherabad, Uzun districts).

Image 3. Moroccan locust: a- swarm, b- moving swarm.

During the larval stage, from the time they hatch to the time they hatch, their range increases from 20 to 100 times. Once the wing is formed, it can fly up to 25-30 km per day with the help of wind.

It takes 25-28 days for the eggs to hatch, and in some years the cold spring and heavy rains prolong their development by 8-10 days. It takes 30 days for locusts to form wings and 60 days for natural extinction, and in some years 60 days. The total life span (from egg to death) is usually 45-60 days, but in some years it can be as long as 80 days.

During the years of drought, locust bodies become very small and attack each other due to lack of grass (cannibalism). A similar drought was observed in 2018. In such years, the number of late locusts decreases sharply, and it takes 2-3 years to return to the previous state. The prevalence of Moroccan locusts in Central Asia and Afghanistan is observed every 10-12 years.

The Otbosar locust (Dociostaurus kraussi Ing.) does not live in isolation, and most Moroccan and Turanian locusts are found in scattered areas. Externally, it is very similar to the Moroccan locust, but the body is relatively thick, the color of the soil, the lower part of the X sign in front of the chest is triangular. In

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the Moroccan locust, the X symbol is well represented. The upper wings of adult locusts are shorter than those of the Moroccan locust. Female locusts are 20-30 mm long, their legs are red, and their males are 15-20 mm. Egg pots are very similar to the Moroccan locust, but smaller, 19-30 mm, 5-6 mm thick. It lays 15-20 eggs in a jar, and there is no white foam like a Moroccan locust in the upper part of the jar. When the male larva is 4 years old, the female is five years old and becomes an adult (imago) insect. The lifestyle is similar to that of the Moroccan locust. Otbosar locust is found in the area up to 1500 m above sea level. In Uzbekistan, locusts have been observed at an altitude of 2,800 m. Otbosar locust is widespread in the rain-fed areas of Uzbekistan, especially in the Surkhandarya region, the main breeding grounds are in the foothills of Baysun and Bobotag. The Moroccan locust does not fly when the wings are formed.

Otbosar locust feeds mainly on onion-barley and various annual grasses, as well as plants with scattered associations. The locust locust prefers mainly leafy weeds, so in some years, when the number of insects increases, the grain is severely damaged.

Otbosar locusts lay 20-100 eggs per 1 m2 on well-drained lands. The larvae begin to emerge 10-15 days earlier than the Moroccan locust. Males develop wings in 20-25 days, and females in 3-5 days. In Surkhandarya and Kashkadarya regions it spreads its wings on April 20-25 and begins to germinate in 2-3 days. Three days later, the eggs begin to hatch. It dies in the southern districts in late May, and in the northern districts in mid-June.

Conclusion.

As a result of examining life development cycles of insects, it was identified that on ephemeral and ephemeroid pastures 2 species of true bird cockroach family, Moroccan and Otbosar locusts, Kravchik beetles from hard wing family, and desert sacks to be the dominant pest species, and their development, reproduction, spread, and its damage level to ephemeral ephemeroid pastures were carefully studied.

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