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A. B. Yeszhanov, I. I. Temreshev, A. M. Makezhanov, A. M. Tursynkulov

“Baiserke-Agro ESPC” LLP, Arkybay village, Almaty region, Kazakhstan.

E-mail: aidyn.eszhanov@gmail.com, temreshev76@mail.ru,

makezhanov81@mail.ru, askhat_t-26@mail.ru

**AVIFAUNA OF FODDER CROP FIELDS
IN SOUTHEAST KAZAKHSTAN
AND ITS ECONOMIC SIGNIFICANCE**

Abstract. The species composition of avifauna of fields of fodder crops in the south-east of Kazakhstan and its economic significance has been studied. In total, on the forage crops in the south-east of Kazakhstan, we noted 52 species of birds belonging to 20 families and 10 orders. Of these, the largest number of species belongs to the group of passerines (Passeriformes) - 27 species. The same group includes the largest number of families - 10 (Passeridae, Paridae, Turdidae, Laniidae, Muscicapidae, Alaudidae, Motacillidae, Hirundinidae, Corvidae, Sturnidae). The second place is occupied by birds of prey (Accipitriformes) - 10 species and 2 families (Accipitridae, Falconidae). Columbiformes are represented by 4 species and 1 family. The rest of the orders have 1-3 species from 1 family, of which 18 bird species are optional or complete synanthropes, i.e. they can live and thrive in anthropogenic habitats. Pest synanthropists are 14 species that can damage not only crops but also living, farm and storage areas (*Columba livia* Linnaeus, 1758, *Streptopelia senegalensis* (Linnaeus, 1766), *Streptopelia decaocto* (Frivaldszky, 1838), *Streptopelia turtur* (Linnaeus, 1758), *Acridotheres tristis* (Linnaeus, 1758), *Sturnus roseus* (Linnaeus, 1758), *Corvus frugilegus* Linnaeus, 1758, *Corvus monedula* (Linnaeus, 1758), *Corvus cornix* (Linnaeus, 1758), *Corvus corone* (Linnaeus, 1758), *Pica pica* (Linnaeus, 1758), *Passer montanus* (Linnaeus, 1758), *Passer ammodendri* Gould, 1872). These species are most widely distributed in the fields of damaged crops, of which the most harmful are the blue dove *C. livia* and a rook *C. frugilegus*. They also have the widest spread in the fields of damaged crops. These species should be monitored periodically. The distribution of birds in the fields of forage crops to a certain extent depends on their ecology. Desert and steppe species (Steppe eagle, Saxaul sparrow, Rosy starling, Grouse, Larks, wheatears etc.) are noted only in semi-desert zone in Kerbulak district. Ecologically plastic species are common on all cultures both in Talgar and Kerbulak districts. Of the 52 bird species identified on forage crops in the south-east of Kazakhstan, most are economically useful. Several of them (Steppe eagle *Aquila nipalensis* Hodgson, 1833, Black-Bellied Sandgrouse *Pterocles orientalis* Linnaeus, 1758 and Pin-Tailed Sandgrouse *Pterocles alchata* Linnaeus, 1766) are listed in the Red Book of the Republic of Kazakhstan.

Key words: avifauna, fodder crops, "Bayserke Agro" LLP, south-east Kazakhstan, economic significance, economic malware threshold (EMT).

Introduction. Birds (Aves) - a group of warm-blooded egg-bearing vertebrate animals, traditionally regarded as a separate class. They represent a group well isolated from the rest of modern vertebrates, one of the most characteristic features of which is a feather cover that protects the body from adverse temperature changes and plays an important role in flight. The ability to fly is the most important feature of birds (some species have lost it again). The front limbs have taken the shape of wings. Birds have a special structure of respiratory and digestive organs, which is closely related to their ability to fly. Another distinguishing feature is the presence of a beak. As of March 2020, the science knew 10,770 species of living birds (20,005 subspecies), as well as 158 species that are extinct in modern historical time. The importance of birds for humans in most cases is positive. They are objects of breeding for food purposes, eat pests, and bring aesthetic pleasure with their singing and appearance. However, the harmful activities of birds can also be quite tangible.

The most noticeable damage is the damage to buildings, monuments and architectural structures by litter. City birds such as pigeons, crows and sparrows sit on protruding parts of buildings, defecate and thus spoil not only the appearance, but also accelerate the destruction of surfaces, causing aggressive corrosion. Pigeons and crows spoil cars and metal surfaces of buildings: in addition to defecation, they scrape and scratch the surface with their claws and beaks, drop a variety of garbage on it. Bird nesting on power line supports becomes a big problem - as a result of construction of nests and finding a large number of birds on the wires the integrity of the line is disturbed, which leads to disruption of the power network. A huge danger for airports and airplanes is posed by birds. In addition to damage to the fuselage lining, wings and cockpit glazing, the animal can get into the engine turbine, which causes the engine to fail and creates a high probability of a plane crash. Ravens, city gulls and pigeons carry many dangerous diseases: ornithosis, tuberculosis, salmonellosis, tularemia and many others. Although the risk of infection is somewhat exaggerated, there is still a risk. You can get infected by droppings, contact with feathers. Domestic cats or dogs can eat or bring a sick animal into the house. In the south and south-east, they can destroy up to 70 % of their crop by eating young grains and rising sprouts. Throughout the season, birds shake eatable grain out of ears and break stems, puke sunflower seeds and grains from the cobs of corn. In addition to seeds and grains, berries and fruit trees are also damaged. Starlings, which are of great benefit throughout the spring and summer season by eating pests, in autumn can glue a tangible part of the harvest of cherries, apples, pears and strawberries. When building nests, birds living in colonies, such as rooks and pebbles, use live branches and stems of plants, trees and shrubs that grow near the nesting site. As a result, many trees are badly damaged and dried out. In addition to breaking down branches, birds also damage their excreta, which fall on the leaves and thus interfere with photosynthesis. In winter, synanthropic birds penetrate granaries and elevators, eating and spoiling stocks. They are also vectors of stock pests such as barn mites. In their nests, stock pests such as mites, skin beetles, spider beetles, flak bark beetles, etc. can also breed. Sparrows and pigeons can eat between 5 % and 10 % of the feed in barns, choosing the most nutritious components. Ravens can destroy up to half of the feed stocks on animal farms. There is a huge risk of infestation, which can destroy all livestock fed from an infected stock. The problem of pest control of harmful activities of birds remains topical all over the world [1-12]. The authors constantly conducted and are carrying out phytosanitary monitoring of "Baysyerke Agro" LLP crops for pest infestation and selection of means for pest control [13,14]. At the same time, invasions of fields of some species of avifauna have been repeatedly observed. For example, a Rock pigeon often destroys sown seeds of soybeans and other crops. Rooks damaged plantings of cucumbers, melons, tomatoes, sunflowers and other crops. In addition, complaints about harmful bird activities were repeatedly received from both private agricultural producers and representatives of state institutions. At the same time in Kazakhstan there are no officially registered preparations against pest birds [15], and even their economic malware threshold (ETM) are not established, unlike neighboring Russia [16]. The Zoological Laboratory of the Kazakh Research Institute of Plant Protection and Quarantine, which was engaged in problems of control of pest birds and rodents, has been disbanded and has not been functioning for a long time since the collapse of the USSR. Therefore, the authors decided to reveal the species composition and economic importance of the avifauna on fodder crops.

Materials and methods. The material was collected in Talgar and Kerbulak districts of Almaty region by the authors of the publication in 2018-2020 in the performance of phytosanitary monitoring of crops forage and other works within the framework of the project MOA RK BR 06249249 "Development of a comprehensive system of improvement of the productivity and breeding quality of farm animals, on the example of LLP "Baysyerke Agro" on the sub-project 2 "Improvement of technology of cultivation and harvesting of forage crops. Besides, observations were made at visits to private farms and state institutions, for example, Kazakh Research Institute of Horticulture (figure 1). Standard techniques were used during the collection of the material. Identification of bird species and specification of bio-ecology and economic significance was carried out with the help of bulletins and guides from the list of literature [17-22]. In the characteristics of birds listed below, crops in the Talgar district are designated as "Baysyerke", while in Kerbulak district as "Kerbulak".



Figure 1 – Various agriculture crops damaged by birds: A - Cucumber slashed by a black crow; B - Pumpkin damaged by rooks; C - Cabbage slashed by rooks; D - Soybean damaged by blue doves

Research results. As a result of the research, the following bird species were observed in the area of forage crops in the south-east of Kazakhstan. Some of them are shown in figure 2.



Figure 2 – Some species of avifauna of forage crop fields: A - Blue dove; B - Rook; C – Common mynah; D - Eurasian blackbird; E - Common Pheasant; F - Black-Billed Magpie; G - Great tit; H - Common Sparrowhawk

Order Passeriformes

Family Passeridae

House sparrow - *Passer domesticus* (Linnaeus, 1758). Sinanthropic species. In large flocks is a pest. Disease carrier. Insectivore. Kerbulak, Bayserke.

Tree sparrow - *Passer montanus* (Linnaeus, 1758). Sinanthropic species. In large flocks is a pest. It is a Disease carrier. Insectivore. Kerbulak, Bayserke.

Saxaul sparrow - *Passer ammodendri* Gould, 1872. Optional synanthropist. The damage is insignificant. Insectivore. Kerbulak.

Family Paridae

Great tit - *Parus major* Linnaeus, 1768. Synanthropic species. Insectivore. Bayserke, Kerbulak.

Turkestan tit - *Parus bokharensis* Lichtenstein, 1823. Insectivore. Kerbulak.

Family Turdidae

Eurasian Blackbird - *Turdus merula* Linnaeus, 1758. Synanthropic species. Insectivore. Bayserke.

Family Laniidae

Turkestan Shrike - *Lanius phoenicuroides* Schalow, 1875. Insectivore, predator of small birds and mammals. Bayserke, Kerbulak.

Family Muscicapidae

Desert Wheatear - *Oenanthe deserti* (Temminck, 1825). Insectivore. Could be a carrier of especially dangerous diseases. Kerbulak.

Isabelline Wheatear - *Oenanthe isabellina* (Temminck, 1820). Insectivore. Could be a carrier of especially dangerous diseases. Kerbulak.

Pied Wheatear - *Oenanthe pleschanka* (Lepechin, 1770). Insectivore. Could be a carrier of especially dangerous diseases. Kerbulak.

Whinchat - *Saxicola rubetra* (Linnaeus, 1758). Insectivore. Could be a carrier of especially dangerous diseases. Kerbulak.

Family Alaudidae

Sky lark - *Alauda arvensis* Linnaeus, 1758. Insectivore. Kerbulak.

Calandra lark - *Melanocorypha calandra* (Linnaeus, 1766). Insectivore. Kerbulak.

Crested lark - *Galerida cristata* (Linnaeus, 1758). Insectivore. Kerbulak.

Family Motacillidae

White Wagtail - *Motacilla alba* Linnaeus, 1758. Insectivore. Bayserke, Kerbulak.

Yellow Wagtail - *Motacilla flava* Linnaeus, 1758. Insectivore. Bayserke, Kerbulak.

Masked wagtail - *Motacilla personata* Gould 1861. Insectivore. Bayserke, Kerbulak.

Water Pipit - *Anthus spinoletta* Linnaeus, 1758. Insectivore. Bayserke, Kerbulak.

Family Hirundinidae

Barn swallow - *Hirundo rustica* Linnaeus, 1758. Sinanthropic species. Insectivore. Bayserke, Kerbulak.

Northern House Martin - *Delichon urbica* Linnaeus, 1758. Synanthropic species. Insectivore. Bayserke, Kerbulak.

Family Corvidae

Hooded crow - *Corvus cornix* (Linnaeus, 1758). Sinanthropic species. The carrier of diseases. In large concentrations, it is a pest. Bayserke, Kerbulak.

Carrion crow - *Corvus corone* (Linnaeus, 1758). Sinanthropic species. The carrier of diseases. In large concentrations, it is a pest. Bayserke, Kerbulak.

Rook - *Corvus frugilegus* Linnaeus, 1758. Sinanthropic species. The carrier of diseases. In large concentrations, it is a pest. Bayserke, Kerbulak. Causes significant harm.

Western jackdaw - *Coloeus monedula* (Linnaeus, 1758). Optional synanthropist. The carrier of diseases. In large concentrations, it is a pest. Bayserke, Kerbulak.

Common magpie - *Pica pica* (Linnaeus, 1758). Optional synanthropist. The carrier of diseases. In large concentrations, it is a pest. Bayserke, Kerbulak.

Family Sturnidae

Common myna or Indian myna - *Acridotheres tristis* (Linnaeus, 1758). A synanthropic species. Insectivore. In large clusters, is a pest. Kerbulak, Bayserke.

Pink starling - *Sturnus roseus* (Linnaeus, 1758). Optional synanthropist. Insectivore. In large clusters is a pest. Kerbulak. No damage noted.

Order Coraciiformes

Family Coraciidae

Eurasian roller - *Coracias garrulus* Linnaeus, 1758. Insectivore. However, in some places it may harm beekeeping. Baysyerke, Kerbulak. No harm noted.

Family Meropidae

Blue-cheeked Bee-eater - *Merops persicus* Pallas, 1773. Insectivore. However, in some places it can harm beekeeping. Baysyerke.

European Bee-eater - *Merops apiaster* Linnaeus, 1758. Insectivore. However, in some places it can be harmful to beekeeping. Baysyerke.

Order Bucerotiformes

Family Upupidae

Hoopoe - *Upupa epops* Linnaeus, 1758. Insectivore. Baysyerke, Kerbulak.

Order Apodiformes

Family Apodidae

Common Swift - *Apus apus* Linnaeus, 1758. Insectivore.

Order Caprimulgiformes

Family Caprimulgidae

European Nightjar - *Caprimulgus europaeus* Linnaeus, 1758. Insectivore. Kerbulak.

Order Columbiformes

Family Columbidae

Blue dove - *Columba livia* Linnaeus, 1758. Synanthropic species. A pest of grain crops, grain storage facilities. Forms large flocks. Disease carrier. Kerbulak, Baysyerke. High population, one of the most harmful species of avifauna.

Laughing dove - *Streptopelia senegalensis* Linnaeus, 1766. Synanthropic species. Does not form large flocks. The damage is insignificant. Kerbulak. Baysyerke.

Eurasian collared dove - *Streptopelia decaocto* Frivaldszky, 1838. Sinanthropic species. Does not form large flocks. The damage is insignificant. Kerbulak. Baysyerke.

European turtle dove - *Streptopelia turtur* Linnaeus, 1758. A synanthropic species. Does not form large flocks. The damage is insignificant. Kerbulak, Baysyerke.

Order Pterocletiformes

Family Pteroclididae

Black-Bellied Sandgrouse – *Pterocles orientalis* Linnaeus, 1758. Graineater, but has no economic value since it doesn't form large flocks. Kerbulak. It is listed in the Red Book of the Republic of Kazakhstan.

Pin-Tailed Sandgrouse - *Pterocles alchata* Linnaeus, 1766. Graineater, but has no economic value since it doesn't form large flocks. Kerbulak. It is listed in the Red Book of the Republic of Kazakhstan.

Order Galliformes

Family Phasianidae

Common pheasant - *Phasianus colchicus* Linnaeus, 1758. Insectivore. Game species. Baysyerke.

Order Accipitriformes

Family Accipitridae

Sparrow Hawk – *Accipiter nisus* Linnaeus, 1758. Predator of birds and rodents, including pests. Baysyerke.

Black kite - *Milvus migrans* Boddaert, 1783. Predator of birds and rodents, including pests. Kerbulak, Baysyerke.

Long-legged Buzzard - *Buteo rufinus* Cretzschmar, 1827. Predator of birds and rodents, including pests. Kerbulak.

Rough-legged Buzzard - *Buteo lagopus* Pontoppidan, 1763. Predator of birds and rodents, including pests. Kerbulak.

Common Buzzard - *Buteo buteo* Linnaeus, 1758. Predator of birds and rodents, including pests. Kerbulak.

Montagu's Harrier - *Circus pygargus* (Linnaeus, 1758). Predator of birds and rodents, including pests. Kerbulak, Bayserke.

Pallid Harrier - *Circus macrourus* (Gmelin, 1770). Predator of birds and rodents, including pests. Kerbulak, Bayserke.

Hen Harrier - *Circus cyaneus* (Linnaeus, 1766). Predator of birds and rodents, including pests. Kerbulak, Bayserke.

Steppe Eagle - *Aquila nipalensis* Hodgson, 1833. Predator of birds and rodents, including pests. Kerbulak. Included in the Red Book of the Republic of Kazakhstan.

Family Falconidae

Common Kestrel - *Falco tinnunculus* (Linnaeus, 1758). A predator of birds and rodents, including pests. Insectivore. Kerbulak, Bayserke.

Order Strigiformes

Family Strigidae

Long-eared Owl - *Asio otus* Linnaeus, 1758. Predator of birds and rodents, including pests. Kerbulak, Bayserke.

Eurasian Scops-Owl - *Otus scops* (Linnaeus, 1758). Predator of birds and rodents, including pests. Insectivore. Bayserke. Common species.

Discussion of research results. In total, we observed 52 species of birds belonging to 20 families and 10 orders on the forage crops in the south-east of Kazakhstan. Of these, the largest number of species belongs to the passerine order - 27 species. The same order includes the largest number of families - 10. In the second place are representatives of the birds of prey order - 10 species and 2 families. Columbiformes counted 4 species and 1 family. The rest of orders include 1-3 species from 1 family. Among them 18 bird species are optional or complete synanthropes, i.e. they can live and thrive in anthropogenic habitats. Pest synanthropists are 14 species that can harm not only crops but also living, household and storage areas. These same species are most widely distributed in the fields of damaged crops (table).

Species composition and distribution of birds in fodder crops in the south-east of Kazakhstan (Talgar and Kerbulak districts, "Bayserke Agro" LLP) in 2018-2020.

Bird species	Culture					
	Lucerne	Soybean	Barley	Wheat	Corn	Wheatgrass
1	2	3	4	5	6	7
<i>Passer domesticus</i>	+	+	+++	+++	+	+
<i>Passer montanus</i>	++	++	+++	+++	+	++
<i>Passer ammodendri</i>						+
<i>Parus major</i>	+	+	+	+	+	+
<i>Parus bokharensis</i>					+	+
<i>Turdus merula</i>	+	+	+	+	+	
<i>Lanius phoenicuroides</i>	+	+	+	+	+	+
<i>Oenanthe deserti</i>					++	++
<i>Oenanthe isabellina</i>					++	++
<i>Oenanthe pleschanka</i>					++	++
<i>Saxicola rubetra</i>					++	++
<i>Alauda arvensis</i>					++	++
<i>Melanocorypha calandra</i>					++	+++
<i>Galerida cristata</i>					++	++
<i>Motacilla alba</i>	++	++	++	++	++	++
<i>Motacilla flava</i>	+	++	++	++	++	+
<i>Motacilla personata</i>	+	+	+	+	+	+
<i>Anthus spinoletta</i>	+	+	+	+	+	+

Table continuation						
1	2	3	4	5	6	7
<i>Hirundo rustica</i>	++	++	++	++	++	++
<i>Delichon urbica</i>	++	++	++	++	++	++
<i>Corvus cornix</i>	+	+	+	+	+	+
<i>Corvus corone</i>	+	+	+	+	+	+
<i>Corvus frugilegus</i>	+++	+++	+++	+++	+++	+++
<i>Coloeus monedula</i>	+	+	+	+	+	+
<i>Pica pica</i>	+	+	+	+	+	+
<i>Acridotheres tristis</i>	++	++	+++	+++	++	++
<i>Sturnus roseus</i>					++	++
<i>Coracias garrulus</i>	+		+	+	+	+
<i>Merops persicus</i>	+	+	+	+		
<i>Merops apiaster</i>	+	+	+	+		
<i>Upupa epops</i>	+		+	+	+	+
<i>Apus apus</i>	+	+	+	+	+	+
<i>Caprimulgus europaeus</i>					+	+
<i>Columba livia</i>	+++	+++	+++	+++	+++	+++
<i>Streptopelia senegalensis</i>	+	+	+	+		+
<i>Streptopelia decaocto</i>	+	+	+	+	+	+
<i>Streptopelia turtur</i>	+	+	+	+		+
<i>Pterocles orientalis</i>					+	+
<i>Pterocles alchata</i>						+
<i>Phasianus colchicus</i>	+	+	++	++	+	+
<i>Accipiter nisus</i>	+	+	+	+	+	
<i>Milvus migrans</i>	++	++	++	++	++	
<i>Buteo rufinus</i>					++	++
<i>Buteo lagopus</i>					+	+
<i>Buteo buteo</i>					+	+
<i>Circus pygargus</i>	++	++	++	++	++	++
<i>Circus macrourus</i>	++	++	++	++	++	++
<i>Circus cyaneus</i>	++	++	++	++	++	++
<i>Aquila nipalensis</i>					+	+
<i>Falco tinnunculus</i>	++	++	++	++	++	++
<i>Asio otus</i>	+	+	+	+	+	+
<i>Otus scops</i>	++	++	++	++		

Symbols: + - single findings; ++ is a common species; +++ - mass species.

As can be seen from table, the distribution of birds in fields of forage crops depends to some extent on their ecology. Desert and steppe species (Steppe eagle, Saxaul sparrow, Rosy Starling, Grouse, larks, wheatears etc.) are marked only in the semi-desert zone in Kerbulak district. Ecologically plastic species are common on all cultures both in Talgar and Kerbulak districts.

Conclusion. Of the 52 bird species identified on forage crops in southeast Kazakhstan, most are economically useful. Several of them (Steppe eagle, Black-Bellied Sandgrouse and Pin-Tailed Sandgrouse) are listed in the Red Book of the Republic of Kazakhstan. Harmful synanthropists are 14 species (optional or complete synanthropists, which can harm not only crops but also living, household and storage areas), of which the most harmful are Blue dove *Columba livia* and a Rook *Corvus frugilegus*.

They are also the most widespread in the fields of damaged crops. These species should be monitored periodically.

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А. Б. Есжанов, И. И. Темрешев, А. М. Макежанов, А. М. Турсынкулов

«Байсерке-Агро оқу ғылыми-өндірістік орталығы» ЖШС

ҚАЗАҚСТАННЫҢ ОҢТҮСТІК-ШЫҒЫСЫНДАҒЫ ЖЕМ-ШӨП ДАҚЫЛДАРЫНЫҢ ЕГІСТІК ОРНИТОФАУНАСЫ ЖӘНЕ ОНЫҢ ШАРУАШЫЛЫҚ МАҢЫЗЫ

Аннотация. Қазақстанның Оңтүстік-шығысындағы жемдік дақыл алқаптары орнитофаунасының түрлік құрамы және оның шаруашылық маңызы зерттелді. Қазақстанның Оңтүстік-шығысындағы жемдік дақылдар егістігінде барлығы 20 тұқымдас пен 10 жасақ жататын құстардың 52 түрі белгіленді. Олардың ішінде ең көп – 27 түрі торғай тәрізді (Passeriformes) отрядына жатады. Бұл жасаққа 10 тұқымдас кіреді (Passeridae, Paridae, Turdidae, Laniidae, Muscicapidae, Alaudidae, Motacillidae, Hirundinidae, Corvidae, Sturnidae). Екінші орында қаршыға тәріздес отряд өкілдерінің (Accipitriformes) 10 түрі және 2 тұқымдасы кездеседі (Accipitridae, Falconidae). Кептер тәрізділердің 4 түрі және 1 тұқымдасы бар. Қалған жасағы 1 тұқымдасының 1-3 түрінен тұрады. Құстардың 18 түрі факультативтік немесе толық синантроп болып саналады, яғни антропогендік мекенде өмір сүріп, өсіп-өнуі мүмкін. Зиянды синантроптардың дақылдарға ғана емес, тұрғын үй, тұрмыстық және сақтау қоймаларына зиян келтіретін 14 түрі кездеседі (*Columba livia* Linnaeus, 1758, *Streptopelia senegalensis* (Linnaeus, 1766), *Streptopelia decaocto* (Frivaldszky, 1838), *Streptopelia turtur* (Linnaeus, 1758), *Acridotheres tristis* (Linnaeus, 1766), *Streptopelia decaocto* (Frivaldszky, 1838), *Streptopelia turtur* (Linnaeus, 1758), *Acridotheres tristis* (tristis), (Linnaeus, 1758), *Sturnus roseus* (Linnaeus, 1758), *Corvus frugilegus* Linnaeus, 1758, *Corvus monedula* (Linnaeus, 1758), *Corvus cornix* (Linnaeus, 1758), *Corvus corone* (Linnaeus, 1758), *Pica pica* (Linnaeus, 1758), *Passer domesticus* (Linnaeus, 1758), *Passer montanus* (Linnaeus, 1758), *Passer ammodendri* Gould, 1872). Осы аталған түрлер бүлінген дақыл алқабында кең тараған. Олардың ішінде ең зияндысы – көк кептер *C. livia* және таған *C. frugilegus*. Олар зақымданған дақыл алқаптарында кең тараған. Көрсетілген түрлерді мезгілімен бақылау қажет. Құстарды азықтық дақыл алқабы бойынша белгілі бір дәрежеде бөлу жағдайы олардың экологиясына байланысты. Шөл және далалық түрлері (дала қыраны, сексеуіл торғайы, ала қараторғай, шетен, бозторғай және т.б.) Кербұлақ ауданындағы жартылай шөлейт аймақта ғана белгіленген. Экологиялық тұрғыдан алғанда пластикалық түрлер Талғар мен Кербұлақ өңіріндегі дақылдарға ортақ. Қазақстанның оңтүстік-шығысындағы жемдік дақылдар егістігінде анықталған құстардың 52 түрінің көпшілігі шаруашылық жағынан пайдалы болып келеді. Олардың бірнешеуі (дала қыраны *Aquila nipalensis* Hodgson, 1833, қарабауыр бұлдырық *Pterocles orientalis* Linnaeus, 1758 және ақбауыр *Pterocles alchata* Linnaeus, 1766) Қазақстан Республикасының «Қызыл кітабына» енген.

Түйін сөздер: орнитофауна, жемшөп дақылдары, «Байсерке Агро» ЖШС, Оңтүстік-шығыс Қазақстан, шаруашылық мәні.

А. Б. Есжанов, И. И. Темрешев, А. М. Макежанов, А. М. Турсынкулов

ТОО «Учебный научно-производственный центр
Байсерке-Агро», Алматинская область, Казахстан

ОРНИТОФАУНА ПОЛЕЙ КОРМОВЫХ КУЛЬТУР НА ЮГО-ВОСТОКЕ КАЗАХСТАНА И ЕЁ ХОЗЯЙСТВЕННОЕ ЗНАЧЕНИЕ

Аннотация. Изучен видовой состав орнитофауны полей кормовых культур на юго-востоке Казахстана и ее хозяйственное значение. Всего на посевах кормовых культур на юго-востоке Казахстана нами было отмечено 52 вида птиц, относящихся к 20 семействам и 10 отрядам. Из них наибольшее число видов принадлежит к отряду Воробьинообразных (Passeriformes) – 27 видов. Этот же отряд включает наибольшее число семейств – 10 (Passeridae, Paridae, Turdidae, Laniidae, Muscicapidae, Alaudidae, Motacillidae,

Hirundinidae, Corvidae, Sturnidae). На втором месте – представители отряда Ястребинообразных (Accipitriformes) – 10 видов и 2 семейства (Accipitridae, Falconidae). Голубеобразные насчитывают 4 вида и 1 семейство. Остальные отряды насчитывают по 1-3 вида из 1 семейства. Из них 18 видов птиц являются факультативными или полными синантропами, т.е. могут жить и процветать в антропогенных местообитаниях. Вредными синантропами являются 14 видов, способных вредить не только на посевах, но в жилых, хозяйственных и складских помещениях (*Columba livia* Linnaeus, 1758, *Streptopelia senegalensis* (Linnaeus, 1766), *Streptopelia decaocto* (Frisvaldszky, 1838), *Streptopelia turtur* (Linnaeus, 1758), *Acridotheres tristis* (Linnaeus, 1758), *Sturnus roseus* (Linnaeus, 1758), *Corvus frugilegus* Linnaeus, 1758, *Corvus monedula* (Linnaeus, 1758), *Corvus cornix* (Linnaeus, 1758), *Corvus corone* (Linnaeus, 1758), *Pica pica* (Linnaeus, 1758), *Passer domesticus* (Linnaeus, 1758), *Passer montanus* (Linnaeus, 1758), *Passer ammodendri* Gould, 1872). Эти же виды имеют наиболее широкое распространение по полям повреждаемых культур. Из них наиболее вредоносными являются сизый голубь *C. livia* и грач *C. frugilegus*. Они же имеют наиболее широкое распространение по полям повреждаемых культур. Указанные виды периодически необходимо контролировать. Распределение птиц по полям кормовых культур в определенной степени зависит от их экологии. Пустынные и степные виды (степной орел, саксаульный воробей, розовый скворец, рябки, жаворонки, каменки и др.) отмечены только в полупустынной зоне в Кербулакском районе. Экологически пластичные виды обычны на всех культурах как в Талгарском, так и в Кербулакском районах. Из 52 видов птиц, выявленных на посевах кормовых культур на юго-востоке Казахстана, большинство являются в хозяйственном отношении полезными. Несколькими из них (степной орел *Aquila nipalensis* Hodgson, 1833, чернобрюхий рябок *Pterocles orientalis* Linnaeus, 1758 и белобрюхий рябок *Pterocles alchata* Linnaeus, 1766) занесены в Красную книгу Республики Казахстан.

Ключевые слова: орнитофауна, кормовые культуры, ТОО «Байсерке Агро», юго-восточный Казахстан, хозяйственное значение.

Information about authors:

Yeszhanov Aydin Baurzhanovich, leading researcher, candidate of biological sciences, "Training research and production center "Bayskerke AGRO" LLP; aidyn.eszhanov@gmail.com; <https://orcid.org/0000-0001-6572-5668>.

Temreshev Izbasar Isataevich, candidate of biological sciences, "Training research and production center "Bayskerke AGRO" LLP, project manager of the Ministry of Agriculture of the Republic of Kazakhstan BR 06249249 "Development of an integrated system to increase productivity and improve breeding qualities of farm animals, on the example of Bayskerke Agro"; temreshev76@mail.ru; <https://orcid.org/0000-0003-0004-4399>.

Makezhanov Arman Mukhamedievich, researcher, "Training research and production center "Bayskerke AGRO" LLP; makezhanov81@mail.ru; <https://orcid.org/0000-0002-9951-3425>.

Tursynkulov Askhat Muratovich, PhD-student, "Training research and production center "Bayskerke AGRO" LLP, junior researcher; askhat_t-26@mail.ru; <https://orcid.org/0000-0003-1108-8506>.

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