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THE SOLUTION OF THE PROBLEM OF UTILIZATION OF ANIMAL CORPSES IN PAVLODAR REGION

Abstract

International life-stock animals marketing, much of which is intended for meat slaughter, today covers almost all countries of the world. As a component of economic well-being, export-import operations with livestock products can be the cause of the spread of dangerous diseases affecting not only animals, but also humans.

The problem of disposal of infected livestock is a matter whose proper solution determines the food security and epizootic well-being of the region. In Pavlodar region there are about three hundred cattle cemeteries, most of which are primitive. Such a situation is typical for the whole Republic, more than 70 % of cattle cemeteries do not meet the requirements and represent as primitive structures. The problem of insufficient provision of the region with livestock disposal sites is solved by the acquisition and use of stationary and mobile incinerators.

A separate issue is the anthrax burial due to the fact that Pavlodar region is characterized by «active risk intensity of anthrax». For the period from 1948 to 2002, 149 foci of anthrax were registered in the region. 131 anthrax burial being a natural reservoir of infection represents a potential threat. It is necessary to maintain these facilities properly, as well as to increase the epizootic safety literacy among the population.

Keywords: *cattle cemetery, veterinary and sanitary well-being, utilization, incinerator, infection.*

Relocation of life-stock animals is an integral part of agricultural production, this process is interstate in nature.

This process is associated with certain risks, primarily veterinary and sanitary, dictated by the possibility of the spread of dangerous diseases of life-stock animals.

The frequency of epidemics among domestic animals, such as Bovine spongiform encephalopathy, Foot and mouth disease, Newcastle disease, and avian influenza, are becoming more frequent and widespread geographically. These epidemics spread quickly to other countries due to the rapid movement of people, animals and products between countries. Epidemics threaten the well-being of people through secondary infection of domestic animals, economic losses and public health. Preventing the spread of epidemics to other areas where livestock is raised is a top priority. However, when this fails and the epidemic has spread, quick and effective measures should be taken to prevent further spread of the infection. Slaughter followed by disposal of infected livestock is an important means of preventing the spread of the epidemic.

Livestock production is the key economic activity of Kazakhstan, which is facilitated by the vast pasture and hay fields of Kazakhstan, which provide an important production base.

The agro-industrial complex is one of the important sectors of the economy, which through the formation of the country's food security is involved in ensuring the national security of the country. In the SWOT-analysis of the branches of the agro-industrial sector, presented in the State Program of Development of the Agro-Industrial Complex of the Republic of Kazakhstan for 2017-2021, the potential risks include the spread of animal diseases and environmental pollution. [1] This question directly concerns Pavlodar region because the livestock industry is well developed in this region. The head of farm animals as of May 1, 2019 is: cattle – 447,4 thousand heads, sheep – 538,9 thousand heads, goats – 70,0 thousand heads, pigs – 76,2 thousand heads, horses – 158,0 thousand heads and birds – 1566,4 thousand heads. In this regard, the issue of disposal of corpses, as a factor in ensuring epizootic well-being, is highly relevant.

In case of violation of veterinary and sanitary measures which regulate all stages of technological processing, this biological waste in its raw form can be infected with pathogenic microorganisms, including infectious agents that are particularly dangerous for animals and humans. In the organs and bodies of animals which died from infectious diseases, the microorganisms which caused the disease remain viable for a long time, retaining pathogenic properties.

The most dangerous of them are the corpses of animals which have died from infectious diseases. If they are not properly harvested, they infect the soil, pastures, and waterbodies. They become accessible to domestic and wild animals, birds, and insects.

Soil plays an important role in the transmission of pathogens. Pathogenic microorganisms are able to maintain their viability for a long time (the causative agent of anthrax, noisy carbuncle, tetanus, swine erysipelas, etc.). Infection of animals is possible while eating infected grass, hay, through soil dust, water.

Within 24 hours after the death of the animal, the owners must inform the veterinary specialist, whose competence includes determining the disposal of the animal's corpse. These rules apply to the fact of abortion or stillbirth in life-stock animals. According to the established procedure, the owner (or the head of the farm, subsidiary farm, joint-stock company, etc.) is obliged to organize events for the delivery of biological waste to the sites of processing or disposal. [2] The procedure for disposal and destruction of biological waste is defined in Article 8 of the Law of the Republic of Kazakhstan «On Veterinary Medicine».

At present, there are 283 cattle cemeteries in the Pavlodar region, 28 of which are typical and 255 are primitive, while the provision in the region is on average 80 %. Nowadays, state acts have been received on all land plots under the cattle cemeteries and transferred to the balance of the State Unitary Enterprise «Veterinary Station» of cities and regions. Funds for maintenance and reconstruction of cattle cemeteries are allocated by akimats from the local budget. Table 1 provides information on the availability of cattle cemeteries in the Pavlodar region in 2019.

Table 1 - Cattle cemeteries in Pavlodar region

№	Name of district	available	of them are		of them are fenced	
			typical	primitive biothermal pits	typical	primitive biothermal pits
1	Aktogay	29	2	27	2	27
2	Bayanaul	16	2	14	2	14
3	Zhelezin	40	3	37	3	37
4	Ertis	26	0	26	0	26
5	Terenkol	36	4	32	4	20
6	Akkuly	21	1	20	1	20
7	May	24	2	22	2	15
8	Pavlodar	22	1	21	1	21
9	Uspen	12	1	11	1	11
10	Sharbakty	29	0	29	0	12
11	Pavlodar c.	1	1	0	1	0
12	Aksu city	15	0	15	0	15
13	Ekibastuz city	16	16	0	16	0
Total:		287	33	254	33	218

No construction of cattle cemeteries is planned for 2019.

In 2016, the Ministry of Agriculture of the Republic of Kazakhstan decided to purchase incinerators as alternatives to the construction of new cattle cemeteries, the lack of which is felt by various regions of the republic. This decision is dictated by the possibility of long-term use of cutting machines, for example, the cattle cemetery is filled on average for the year, at almost the same financial costs. The location of the cattle cemeteries remains unchanged throughout the life of the plant, however, the administrative boundaries of the settlements undergo changes over the decades, the settlements are growing, which inevitably leads to a change in the areas of sanitary gaps. Currently, 19 stationary and 2 mobile incinerators are already being used in the Pavlodar region. [3] (Tables 2,3)

Table 2- The presence of incinerators in the Pavlodar region

№	Name of area	Number of rural districts	Number of incinerator	Of them are	
				stationary	mobile
1	Aktogay district	11	1	1	
2	Bayanaul district	14	2	2	
3	Zhelezin district	12	2	1	1
4	Ertis district	16	2	2	
5	Kashyr district	12	2	2	
6	Lebyazhye district	10	1	1	
7	May district	11	1	1	
8	Pavlodar district	13	1	1	
9	Uspen district	12	3	3	
10	Sharbakty district	13	1	1	
11	Pavlodar city	5	2	1	1
12	Aksu city	6	2	2	
13	Ekibastuz city	13	1	1	
Total in region:		148	21	19	2

Incinerators are used not only for the disposal of corpses, as well as for the destruction of biological waste, such as medical waste and other biological confiscates.

At the same time, anthrax cattle cemeteries are of considerable epizootic and epidemic danger in the territory of Pavlodar region. Being natural reservoirs of anthrax infection present there are 131 of them.

A laboratory - bacteriological study of soil foci of anthrax is entrusted to the experts of the veterinary service of the Ministry of Agriculture, the scientific and scientific center of quarantine and zoonotic infections, the Scientific and Practical Center of Sanitary and Epidemiological Examination and Monitoring, the scientific and research center of the scientific and practical center of sanitary and epidemiological expertise and monitoring; soil samples are taken from the territory of anthrax soil foci and studied for the presence of anthrax.

Table 3 - Use of stationary incinerators in the Pavlodar region in December 2018

N	Name of district	Corpses of pets	Syringes, needles, test tubes (pieces)	Confiscated pieces, medical waste
1	Ertis	223	4241	
2	Kashyr district	53		
3	Uspen district	100		
4	Pavlodar city	1113	138	4
5	Ekibastuz city	1499		
Total in region		2998	4379	4

The territory of the Republic of Kazakhstan is a risk zone for the occurrence of anthrax cases. Conventionally, 3 zones were established as a risk of anthrax. The first is a zone with a very active intensity of the risk of anthrax, this zone includes regions where there are three or more cases of anthrax during last 10 years.

The second zone is the «active intensity of the risk of anthrax», which includes regions with the registration of 1-2 cases of the disease during last 10 years.

The third zone with low intensity risk of anthrax. These are regions where the case has not been reported during last 10 years, but cases of anthrax have been previously reported.

Pavlodar region is characterized by «an active intensity of the risk of anthrax.» From 1948 to 2002 149 foci of anthrax were registered in the region: in Aktogai district-25, in Bayanaul-13, in Zhelezin district -9, in Ertis-17, in Kashyr-10, in Lebyazhye-13, in May-9, in Pavlodar district -12, in Uspen - 5, in Sharbakty- 10, in the city of Pavlodar- 1, the city of Ekibastuz- 9, the city of Aksu- 16 cases. In the territory of Pavlodar region, 131 anthrax burial sites were installed. All anthrax burials are fenced with standard identification marks. These land plots have been entered into the Automated Information System of the state land cadastre, state acts have been received, contracts have been concluded with the Republican state enterprise «Kazgeodeziya» and marked on the topographic map of the area. By the decision of the Akims of rural districts, the land plots are assigned to State utilities enterprise «Veterinary Station» of cities and districts. Meanwhile, the problem of unauthorized burial of small domestic and farm animals continues to exist. In a number of areas, facts of the removal of animal carcasses to spontaneous dumps near human settlements are recorded.

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ТҮЙІН

Ауыл шаруашылық жануарларының алмасуы қауіпті ауруларының таралу мүмкіндігімен шартталынатын ветеринариялы- санитарлық қауіп-қатерлермен байланысты. Мәйіттерді жою мәселесі, эпизоотиялық тұрмыс жағдайын қамтамасыз ету факторы ретінде, өте өзекті болып табылады.

Қазіргі уақытта Павлодар облысында 283 мал қорымы бар, олардың ішінде 28 типтік және 255 қарапайым.

Санитарлық және экологиялық қауіпсіздікті қамтамасыз ету үшін Павлодар облысында мал қорымынан өртеу қондырғыларына көшу бағдарламасын іске асыруда. Қазіргі уақытта Павлодар облысында 19 стационарлық және 2 жылжымалы өртейтін пеш (инсинератор) пайдаланылуда.

Павлодар облысында сібір жарасының 149 ошағы тіркелген: Ақтоғай ауданында -25, Баянауылда -13, Железин ауданында -9, Ертіс ауданында -17, Качир ауданында -10, Лебяжіе ауданында -13, Май ауданында -9, Павлодар ауданында -12, Успен ауданында -5, Шарбақты ауданында -10, Павлодар қаласында -1, Екібастұз қаласында -9 және Ақсу қаласында-16. Павлодар облысының аумағында 131 сібір жару алаңы орнатылды. Барлық сібір жарасының жерлеуі стандартты сәйкестендіру белгілерімен қоршалған. Аталған жер учаскелері «Мемлекеттік жер кадастрының автоматтандырылған ақпараттық жүйесі және техникалық қамтамасыз ету» басқармасына қабылданған және «Қазгеодезия» РМҚК-мен келісімшарттарға енгізілген. Бұл жер учаскелері қалалар мен аудандардың «Ветеринарлық станция» КМК-на жүктеледі. Павлодар облысындағы 131 сібір жарасының жерлеуі эпизоотиялық және эпидемиялық қауіп төндіреді. Үй және ауылшаруашылық жануарларын рұқсатсыз жерлеу мәселесі бүгінгі күні әлі де өзекті.

РЕЗЮМЕ

Перемещение сельскохозяйственных животных связано с ветеринарно-санитарными рисками, обусловленными возможностью распространения опасных заболеваний

сельскохозяйственных животных. Вопрос утилизации трупов, как фактор обеспечения эпизоотического благополучия, является весьма актуальным.

На настоящий момент в Павлодарской области имеется 283 скотомогильника, из них 28 типовых и 255 примитивных.

В области реализуется программа перехода от скотомогильников к инсинераторам, как решение вопроса санитарной и экологической безопасности. На данный момент в Павлодарской области уже используют 19 стационарных и 2 передвижных инсинератора.

В Павлодарской области зарегистрировано 149 очагов сибирской язвы: в Актогайском районе- 25, в Баянаульском- 13, в Железинском- 9, в Иртышском- 17, в Качирском- 10, в Лебяжинском- 13, в Майском- 9, в Павлодарском-12, в Успенском- 5, в Щербактинском- 10, в г. Павлодаре- 1, г. Экибастузе- 9, г. Аксу- 16 случаев. На территории Павлодарской области установлено 131 сибиреязвенное захоронение. Все сибиреязвенные захоронения огорожены, имеют стандартные опознавательные знаки. Данные земельные участки внесены в АИСГЗК и получены государственные акты, также заключены договора с РГКП «Казгеодезия». Данные земельные участки закреплены за ГКП «Ветеринарная станция» городов и районов. 131 сибиреязвенное захоронение Павлодарской области представляют эпизоотическую и эпидемическую опасность. Проблема несанкционированного захоронения мелких домашних и сельскохозяйственных животных актуальна по сей день.

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САНИТАРНО - БАКТЕРИОЛОГИЧЕСКАЯ ОЦЕНКА СОСТОЯНИЯ ВОДНЫХ И ПОЧВЕННЫХ ЭКОСИСТЕМ В УСЛОВИЯХ СТЕПНОЙ ЗОНЫ ЗАПАДНОГО КАЗАХСТАНА

Аннотация

Исследования по изучению природных факторов были проведены на территории Таскалинского района в ОПХ «Атамекен» Западно-Казахстанской области. В статье рассмотрены причины возникновения патологий овец в степной зоне Западно-Казахстанской области. Проведены санитарно-бактериологические исследования почвы и воды, анализированы данные климатических условий, их особенности на возникновение патологий овец, как микробного характера, так и проявления смешанных инвазий. Были выделены наличие таких микроорганизмов, как кокки, *E. coli*, анаэробы, а также наличие ассоциированных инвазий, что говорит о зараженности местности, которое служит причиной сезонного массового проявления патологий овец. Отмечены основные факторы, предшествующие возникновению патологий овец: весенние воды затопляли до 50-60% всей территории, образуя лиманы с луговой, лугово-болотной и прибрежно-водной растительностью. Которые в последующем создавали благоприятные условия для развития микроорганизмов и увеличения числа паразитов. Основные патологии овец в степной зоне больше всего проявляются в пастбищный период, а именно гельминтозы, вследствие которых происходит снижение продуктивности на 40%. Эпидемиологическую обстановку в степной зоне Западного Казахстана в группе «природно-очаговых инфекций» можно считать относительно благополучной.

Ключевые слова: овец, санитарно-бактериологическая оценка, почва, заразные болезни, вода, гельминтозы.

Введение. Проблема ассоциированных (смешанных) инфекций и инвазий у овец на современном этапе является исключительно важной, так как в естественных условиях одновременное или поочередное заражение животных двумя или несколькими возбудителями происходит очень часто. Потенциально опасными источниками для заражения животных микроорганизмами и паразитами являются почва и вода животноводческих объектов. Наличие