5. Structural comparison of the cleavage-activation site of the fusion glycoprotein between virulent and avirulent strains of Newcastle disease virus / T. Toyoda, T. Sakaguchi, K. Imal [et al.] // Virology. – 1987 – Vol. 158. – P. 242-247.

6. Newcastle disease // O.I.E. Manual of standarts for diagnostic tests and vaccines, adopted 2012.

7. *Hu S., Ma H., Wu Y.* et al. A vaccine candidate of attenuated genotype VII Newcastle disease virus generated by reverse genetics. Vaccine. 2009; 27 (6): 904-910.

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НЬЮКАСЛ АУРУЫНЫҢ КЕЙБІР ВИРУС ШТАММДАРЫНЫҢ БИОЛОГИЯЛЫҚ ҚАСИЕТТЕРІН ЗЕРТТЕУ

Аңдатпа

Бұл мақалада жеке аулада орналасқан тауықтан оқшауланған Ньюкасл ауруының екі штаммының және құлдыраған көгершіннің биологиялық қасиеттерінің нәтижелері келтірілген.

Кілт сөздер: Ньюкасл ауруының вирусы, құс парамиксовирусы тип 1, генотип.

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STUDY OF THE BIOLOGICAL PROPERTIES OF SOME NEW CASTLE DISEASE VIRUS STRAINS

Annotation

In this article presents the results of studying the biological properties of two strains of Newcastle disease isolated from chickens contained in a private farmstead and one isolated from a fallen pigeon in the city of Almaty.

Keywords: Newcastle disease virus, paramyxovirus of birds of type 1, genotype.

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STUDIES ON RISK OF BRUCELLOSIS IN DAIRY FARMS

Abstract

The article presents results on monitoring of veterinary and sanitary regimes for brucellosis in some dairy complexes of the Almaty region. We also estimated risk of developing the disease.

***Keywords*:** brucellosis, monitoring, control points, veterinary-sanitary regime, risk level, dairy farm.

Introduction

A dairy cattle breeding is one of the leading branches of agricultural production. At present, not only the increase in the productivity of cows, but also the quality of milk, is relevant. In this regard, the optimization of veterinary and sanitary regimes in dairy farms is of great importance. Preventive work on dairy farms should rely mainly on strict adherence

to sanitary hygienic regimens, especially for the prevention of especially dangerous infectious diseases such as brucellosis, tuberculosis, etc. [1].

Not only the economic efficiency of productive activities depends on observing these measures, but also the very existence of livestock-breeding complexes. Only reliable provision of anti-epizootic protection allows the dairy farm to solve the set tasks and prevent outbreaks of a contagious disease. In addition, the veterinary-sanitary regime includes a wide range of issues, such as hygiene of feeding, keeping animals, hygiene of milking, which have a great impact on productivity, milk quality and incidence in animals. In this way, the study of anti-epizootic protection and conditions of veterinary-sanitary regimes in dairy farms in Almaty region is relevant. Especially to prevent and control highly dangerous zoonotic infections (brucellosis, tuberculosis, etc.) [2].

In this regard, the goal was to monitor veterinary and sanitary regimes: zoning of the territory (extended protection zone, internal protection zone, production zone, devices for veterinary and sanitary access, sanitary passes etc.) and dairy cows. To this end, we developed a monitoring methodology that allows assessing the following control points: sanitary protection of the farm, zoning of the territory, provision of premises, characteristics of storage methods for power sources and water, water quality, manure storage characteristics and manure storage and disinfection practices, neutralization of bio waste, clinical condition of animals, usefulness of feeding animals, quality of feed, state of metabolism in the room, indoor climate, ventilation system and others [1,3] .

Materials and methods

As a material, the results obtained were used, which were carried out on the basis of normative documents and veterinary-sanitary regulations:Sanitary rules and regulations for livestock enterprises (1.11.087-97 of the Republic of Kazakhstan), regulations for organizations engaged in cattle production (October 31, 2015 No.870) technical regulations on "Requirements for the safety of feed and feed additives" (18 March 2008, No. 263).

Epizootological monitoring was conducted according to the method of Y.I.Kassymov[3].

Results and discussion

The results of the monitoring determined the level of risk of brucellosis occurrence, decrease in productivity and quality of dairy products. The level of risk of brucellosis occurence is considered to be very high - when assessing below 50 points, high - in assessing 51-70 points, average - in assessing 71-80 points and low - in assessing 81-100 points.

Surveys of the territory and conditions of detention were carried out in three dairy farms in the Almaty region: Limited Liability Partnership (LLP) «Amiran», Peasant Farming (PF) «Aidarbayev» and PF «Alipov».

The results of monitoring the farm area are shown in Table 1.

Table 1 - Results of epizootological monitoring of the veterinary and sanitary status of various economic entities.

№	Checkpoints	Score in points			
		maximum	Actual		
			LLP Amiran	PF Aidarbayev	PF Alipov
1	Sanitary protection of the farm (sanitary protection zones, fences, sanitary passes, landscaping)	15	15	15	7
2	Zoning of the territory and characterization of the production zone	10	10	7	7

3	Provision of premises (barns, calf-sheds, insulator, quarantine rooms, etc.)	10	10	10	10
4	Characteristics of methods for storing feeds	15 15	13	12	8
5	Characteristics of water supply sources and water quality	15			
	Characteristics of storage of manure and methods of storage and disinfection of	15	15	10	8
7	Characteristics of methods for collecting, disposing and neutralizing bio waste	20	20	8	8
	TOTAL	100	97	77	58

When examining the sanitary protection we found that the farm territory is enclosed by a fence, and all objects of the premise are carried out on the principle of functional zoning (with the exception of the PF Alipov). In the PF Aidarbayev, rules in the production zone are violated (unplanned movement of staff, corral with a ladder and the absence of dispensaries for newborn young animals). All dairy complexes have pens for walking animals. When entering the farms of LLP Amiran and PF Aidarbayev for disinfection of the running gear of motor vehicles that work year-round (in winter, materials that do not freeze at low temperatures are added) that corresponds to the technical regulations. In the PF Alipov, at the entrance to the production line, there is no sanitary entry, which is a serious violation of veterinary and sanitary rules.

In the farms (LLP Amiran and PF Aidarbayev), centralized water supply, have strictly regulated zones of sanitary protection from pollution, and decentralized water supply, local (PF Alipov) which each zone is served by separate sources (tubular wells).

When assessing the ways of storage and disinfection of manure, it is established that in the complexes of LLP Amiran and PF Aidarbayev manure storage is located 70 m from the production zones, outside the fencing of the territory that corresponds to the sanitary-hygienic requirements. Manure storage in the third farm (PF Alipov) is not fenced and the site is not pinched, and there is also no watertight layer and dwellings. Such storage threatens the spread of contagious diseases and environmental pollution. On farms where liquid manure is produced (PF Aidarbayev), not only quarantine manure-carriers are missing (for six-day quarantine of manure), but storage of liquid manure is carried out in non-adapted tanks (in ravines, in former silo trenches), as well as in storage without waterproofing.

Violations of the veterinary and sanitary regime were revealed, when examining methods for collecting, disposing and neutralizing bio waste on dairy farms (except LLP Amiran) do not clean bio waste on time (afterbirth, milk from cows with mastitis, fodder waste) and there are no rational ways of their utilization, which creates a significant threat of infectious diseases, there are primitive animal burial sites on the farms (biothermal wells) and corresponds to veterinary-sanitary rules.

Taking into account the aforementioned violations of the veterinary and sanitary regime, we lowered the estimate for the following indicators: sanitary protection of the farm, characterization of methods for storing feed, characterization of storage of manure and storage methods and decontamination of manure, characteristics of methods for collecting, disposing and neutralizing bio waste. Surveys of welfare conditions for animals are shown in Table 2.

Table 2 - Results of veterinary and sanitary monitoring of dairy cows

№	Checkpoints	Score in points			
		maximum	Actual		
			LLP Amiran	PF Aidarbayev	PF Alipov
1	Inspection of animals and their visual assessment	15	15	13	10
2	Sanitary and hygienic assessment of the nutritional value animals on the diet	15	10	10	8
3	Results of the study of feed quality	10	10	9	8
4	Characteristics of the microclimate of the room (temperature, humidity and gas composition of air)	15	15	9	7
5	Illumination of premises (natural and artificial)	15	13	8	8
6	Evaluation of the ventilation system and its effectiveness	15	15	12	7
7	Assessment of the sewage system and its effectiveness	15	15	10	8
	TOTAL	100	93	71	56

Sanitary condition of the skin of the cows and udders during visual assessment was satisfactory, except PF Alipov which did not comply with veterinary and sanitary requirements because was contaminated with manure.

Due to the fact that the farm complexes do not have a detailed analysis of the diet, it is impossible to establish the level nutritional value of the feed. Along with this, it is not possible to determine the level of metabolic disorders in dairy cows, as there no biochemical study of their blood was performed.

The microclimate of the cowsheds (PF Aidarbayev and PF Alipov) does not meet the sanitary and hygienic requirements for the following indicators: high humidity and exceeding the permissible level of ammonia in the air and a low level of artificial illumination in winter. It was established that the exhaust chutes in LLP Amiran and PF Aidarbayev provide sufficient air exchange in the cowsheds when assessing the efficiency of the ventilation system

The most efficient sewerage system was in LLP Amiran (with the help of delta scrapers), less efficient in PF Aidarbayev (with the help of a bulldozer) and not efficient in PF Alipov (using scraper conveyors).

When monitoring the veterinary-sanitary regime of keeping dairy cows, the score in points is reduced for the following control points: usefulness of feeding animals, state of metabolism, microclimate of cowsheds and ventilation system.

When analyzing the monitoring data of the veterinary and sanitary regime, a different level of risk of brucellosis occurrence and reducing milk production milk quality and disease occurrence is established,: At LLP Amiran - 93 points (low), PF Aidarbayev 71 points (medium), PF “Alipov” 56 points (high level).

LLP Amiran has a low level of risk, as it’s a dairy farm built according to modern technology (German project), which allows to observe the veterinary and sanitary regime of the territory and keeping cows in the milk production.

Conclusion

Monitoring of the veterinary and sanitary regime of the farm territory and the conditions of milk cows, indicates a low (LLP Amiran), medium (PF Aidarbayev) and high (PF Alipov) risk of brucellosis occurrence, reduced productivity, milk quality.

According to monitoring results, violations of the veterinary and sanitary regime are revealed (absence of sanitary passes, disinfection barriers, territory zoning, bio waste neutralization, high humidity, exceeding the permissible level of ammonia content, low level of artificial illumination), which must be eliminated on dairy farms, that will significantly reduce risk of brucellosis occurrence quality are revealed.

References

1. *V.I. Gershun, E.E. Petrenko,* V.V. Journal of "Research, Results." 2013(4) 8/1. 39-43pp.

2. *Ivanov N.P.* Brucellosis of animals and measures to combat it Monograph -2nd ed. Almaty, 2007-612p.

3. *Kassymov Y.* Epizootological Observation of brucellosis infected area. Methodical instructions. Almaty, 2002, 18p. (in Kazakh and Russian languages).

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СҮТ ФЕРМАЛАРЫНДА БРУЦЕЛЛЕЗДІҢ ШЫҒУ ҚАУПІН АНЫҚТАУ

Аңдатпа

Эпизоотологиялық мониторинг Алматы облысының үш сүт кешенінде жүргізілді: Амиран ЖШС, Айдарбаев ШҚ, Алипов ШҚ. Мақалада ветеринариялық-санитариялық режимдер бойынша кризистік нүктелері анықталынған. Олар: ферманың ішкі-сыртқы қорғанысы, ферманың аумақты зоналарға бөлінуі, мал объектілерімен қамтамасыз етілуі, суғару жүйелері, көңді жинау және өңдеу тәсілдері, биоқалдықтарды зарарсыздандыру, жануарлардың клиникалық жағдайы, азықтандыру сапасы, қора-жайлардың микроклиматы, желдету және кәріз жүйесі, дауалық карантиндеу жүйесі. Әрбір бақылау нүктесі бойынша бал қойылып, нәтижесінде сүт фермаларында ветеринариялық-санитариялық режимнің бұзылғандығы анықталып, бруцеллездің шығу қаупі және өнімділіктің төмендеуіне әсер ететін тәуекелдің деңгейі анықталынған.

Кілт сөздер: бруцеллез, мониторинг, бақылау нүктелері, ветеринарлық-санитарлық режим, тәуекел деңгейі, тауарлы-сүт фермасы.

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ИЗУЧЕНИЕ РИСК ВОЗНИКНОВЕНИЯ БРУЦЕЛЛЕЗА В МОЛОЧНЫХ ФЕРМАХ

Аннотация

Эпизоотологический мониторинг проводили в трех молочных комплексах Алматинский области: ТОО Амиран, КХ Айдарбаев, КХ Алипов. На основе ветеринарно-санитарного режима противоэпизоотической защиты молочно-товарных ферм разработана методика мониторинга, которая предусматривает оценку в баллах следующих контрольных точек: санитарная защита фермы, зонирование территории, обеспеченность помещениями, характеристика способов хранения кормов и источников водоснабжения, характеристика навозохранилища и способов хранения, состояние ветеринарно-санитарных объектов (дезбарьеры, санпропускник и др.) характеристика способов сбора,

утилизации и обезвреживание биоотходов, клиническое состояние животных, качество кормов, микроклимат помещений, система вентиляции и канализации, система профилактического карантирования. По результатам данного мониторинга выявлены нарушения ветеринарного-санитарного режима в молочно-товарных фермах, определен риск возникновения бруцеллеза, которая влияет на снижение продуктивности.

Ключевые слова: бруцеллез, мониторинг, контрольные точки, ветеринарно-санитарный режим, уровень риска, молочно-товарная ферма.

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PESTICIDE RESIDUES IN FISH FEED WHEN USING NON-TRADITIONAL FEED ADDITIVE TSEOFISH

Annotation

The article presents the results of the study of residual amounts (RA) of pesticides in fish using feed additives in their diet supplemented with 1%, 2%, 3% and 4%. It has been established that adding Tseofish to the feed, the level of RA of pesticides decreases. Without adding a feed additive, the presence of RA of pesticides is observed in 28.8% of feed samples; when the additive is added to the feed, 1% is 25%; when applying 2% of the additive - in 22%, with the addition of 3% - in 20%, when 4% - in 17% of the samples of feed. It was found that Tseofish based on zeolite due to sorption properties reduces the content of RA of pirimiphos methyl (PM) in meat of fish when using a pesticide in the composition of the feed. It has been shown experimentally that the content of RA of PM in fish meat with the addition of 4% of Tseofish in feed is reduced to 0.01 mg/kg in comparison with the control group (0.03 mg/kg).

Key words: Tseofish, pesticide, feed, feed additive, sample.

Introduction

Nowadays, more than 800 different kinds of pesticides are used for the control of insects, rodents, fungi and unwanted plants in the process of agricultural production. Although most of them leave the products or degrade in soil, water and atmosphere, some trace amounts of pesticide residues can be transferred to humans via the food chain, being potentially harmful to human health [1]. Pest control in intensive agriculture involves treatment of crops (fruits, vegetables, cereals, etc) pre and post harvest stages, rodenticides are employed in the post-harvest storage stage, and fungicides are applied at any stage of the process depending on the crop. These chemicals can be transferred from plant to animal via the food chain. Furthermore, breeding animals and their accommodation can themselves be sprayed with pesticide solution to prevent pest infestations. Consequently, both these contamination routes can lead to bioaccumulation of persistent pesticides in food products of animal origin such as meat, fat, fish, eggs and milk [2-4]. During the last decades much attention has been given to this group of substances and the international level after it became apparent that they are transported through the environment and critical concentrations have been reached in some areas even in places where they have never been produced or used.

Several countries banned the use of Organochlorine Pesticides (OCPs) during the 1970s and 1980s, although many of them continue to been used by other countries. OCPs have been identified as one of the major classes of environmental contaminants because of their