1st Virtual Meeting for Epidemiology Network for West Eurasia Region, 2022

Epidemiological situation of FMD in the Republic of Kazakhstan

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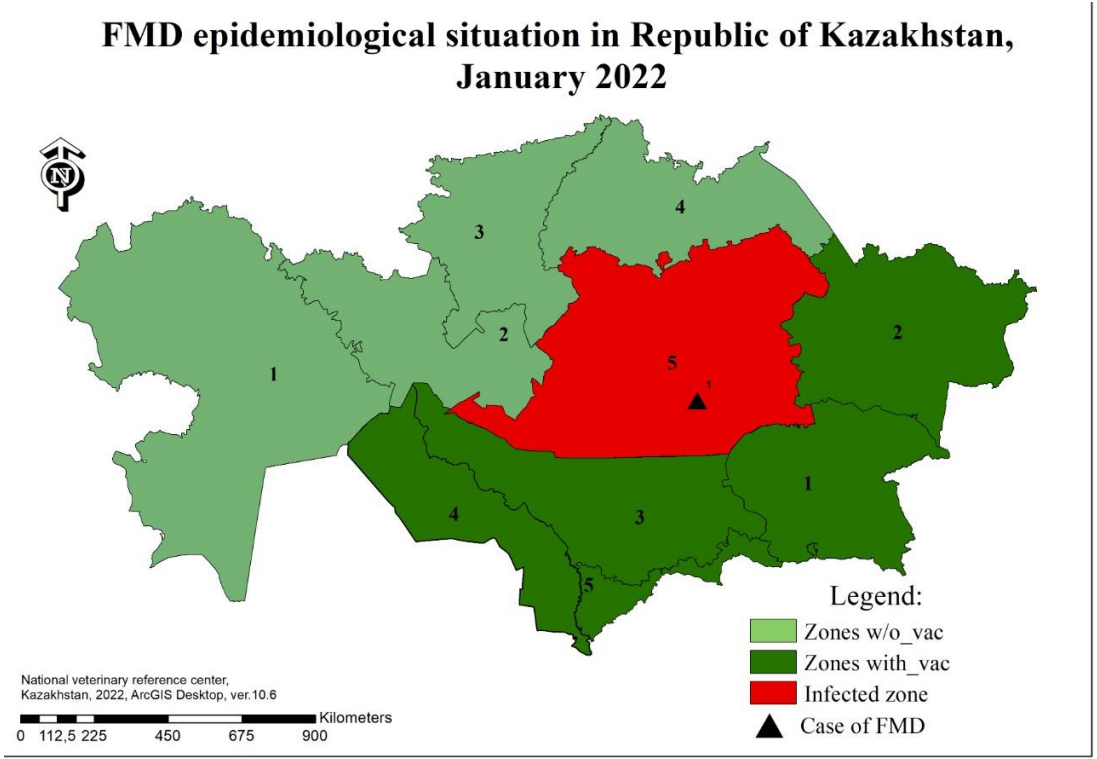
FMD outbreaks in Kazakhstan



- *In January 2022, FMD outbreak was registered in the 5th free zone without vaccination (Karaganda region)*
- *Identified Serotype: O*
  Topotype: ME-SA
  Lineage: Ind-2001
- *Reconfirmation:*
  - *FGBU "ARRIAH" (24/01/2022);*
  - *WRLFMD (14/02/2022) –Pirbright Institute.*
- *Taken measures:*
- ✓ *Quarantine;*
- ✓ *Elimination of the focus;*
- ✓ *Restrictions on the movement*

Outbreak response

In order to prevent further spread of the infection in accordance with the FMD control program and Contingency Plan, the following activities were carried out:

1) analysis of movement of animals and products of animal origin from 1.12.2021 to 04.01.2022:
    a) to Zone 5
    б) from Zone 5
2) animals and farms where animals from Zone 5 were previously moved were identified, restrictions on movement should be introduced;
4) within 10 days, daily observation of animals for signs FMD was carried out;
5) blood sampling for NSP were taken from animals moved from Zone 5 and into Zone 5 without vaccination in order to determine the status;
6) public information campaign was carried with farmers

Figure 2 Movement of animals from the Zone of infection

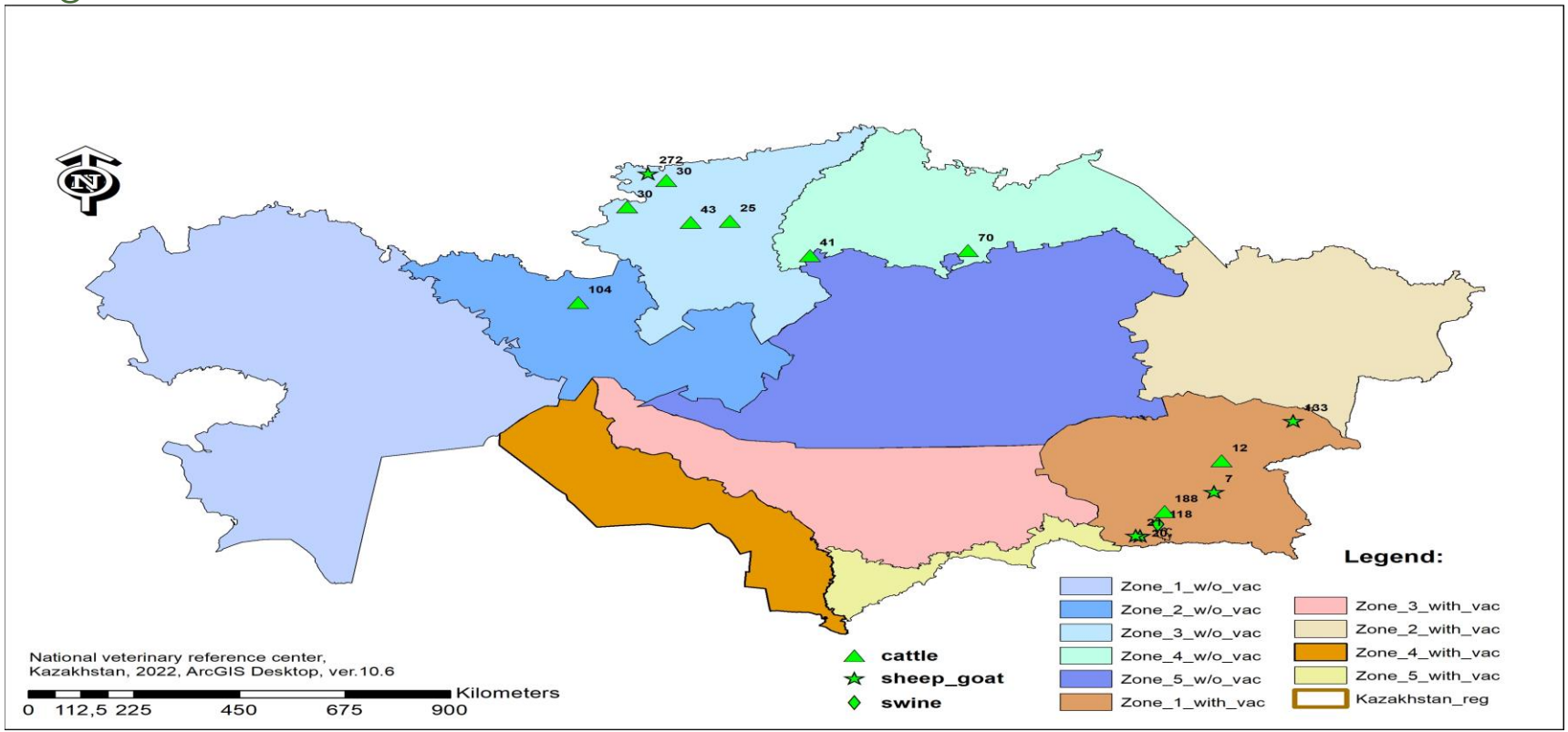


Table 1 - Data on the importation of susceptible animals into Zone 5 for the period from 12/01/2021 - 01/04/2022

№	Species	Qty (heads)	Sender's zone number (with status)	Of them to slaughter	Animals subjected to movement restrictions and research
1	Cattle	278	Zone 4 without vaccination	147	131
2	Small ruminants	171	Zone 4 without vaccination	124	47
3	Cattle	5	Zone 2 without vaccination	0	5
4	Small ruminants	100	Zone 2 without vaccination	82	18
5	Cattle	480	Zone 1 without vaccination	209	271
6	Cattle	1579	Зона 3 без вакцинации	793	786
Total:		**2613**		**1355**	**1258**

Table 2 - Data on the movement of susceptible animals from Zone 5 for the period from 12/1/2021-01/04/2022

№	Species	Qty (heads)	Sender's zone number (with status)	Of them to slaughter	Animals subjected to research
1	Cattle	568	Zone 4 without vaccination	457	111
2	Small ruminants	10	Zone 4 without vaccination	10	0
3	Cattle	194	Zone 2 without vaccination	90	104
4	Cattle	269	Zone 1 with vaccination	69	200
5	Small ruminants	357	Zone 1 with vaccination	176	181
6	Pigs	415	Zone 1 with vaccination	297	118
7	Cattle	395	Zone 3 without vaccination	267	128
8	Small ruminants	1235	Zone 3 without vaccination	963	272
Total:		**3443**		**2329**	**1114**

Table 3. Results of studies on the detection of FMD virus NSP by ELISA

№	Species	Number of samples	Type of samples	Study method	Results	
					Positive	Negative
Zone 2 without vaccination						
1	Cattle	104	blood serum	ELISA test	0	104
2	Small ruminants	-	-		-	-
3	Pigs	-	-		-	-
Zone 3 without vaccination						
1	Cattle	128	blood serum	ELISA test	0	128
2	Small ruminants	272	blood serum		0	272
3	Pigs	-	-		-	-
Zone 4 without vaccination						
1	Cattle	111	blood serum	ELISA test	0	111
2	Small ruminants	-	-		-	-
3	Pigs	-	-		-	-
Zone 5 without vaccination						
1	Cattle	1193	blood serum	ELISA test	0	1193
2	Small ruminants	65	blood serum		0	65
3	Pigs	-	-		-	-
Zone 1 with vaccination						
1	Cattle	200	blood serum	ELISA test	0	200
2	Small ruminants	181	blood serum		0	181
3	Pigs	118	blood serum		0	118

Table 4. Scheduled diagnostic tests in 2021

Zone	Sample	Species	Research on NSP by ELISA	
			Number of animals	Result
Zone 1 without vaccination	Serum	Cattle	4927	отр
		Small ruminants	5808	отр
		Pigs	699	отр
Zone 2 without vaccination	Serum	Cattle	1639	отр
		Small ruminants	1637	отр
		Pigs	753	отр
Zone 3without vaccination	Serum	Cattle	2835	отр
		Small ruminants	2511	отр
		Pigs	3130	отр
Zone 4 without vaccination	Serum	Cattle	3237	отр
		Small ruminants	3920	отр
		Pigs	1919	отр
Zone 5 without vaccination	Serum	Cattle	3039	отр
		Small ruminants	2827	отр
		Pigs	208	отр
Total:			**39089**	

FMD control in the Republic of Kazakhstan

1. A plan for control, prevention, and elimination of FMD in the Republic of Kazakhstan has been developed.
2. State veterinary organizations have been established at the regional level, which are also assigned the functions of carrying out veterinary measures against FMD, incl. sampling of materials, vaccination and identification of livestock.
3. Carrying out veterinary activities based on the principles of analysis, assessment and risk management. Given the results:

- monitoring studies on non-structural proteins of FMD;
- zoning of the territory for FMD according to the results of scientific and laboratory studies, taking into account the recommendations of WOAH;
- introduced a system of epizootic surveillance with the inclusion of passive and active surveillance;
- carrying out identification of newborn farm animals;
- specific immunoprophylaxis against FMD is used within the framework of the chosen strategy, based on zoning of territories; the frequency of vaccination and the timing of its implementation; association of diagnostic studies with the type of vaccine used.

4. Veterinary Contingency Plan

Investigation of each suspicious case

- In 2021, RSE "NRCV" received 881 samples to conduct reference tests to determine the presence of antibodies to non-structural proteins of FMDV and 97 samples to determine the RNA of this virus in order to exclude virus carriers.

Table 5 Sample data

Name of the region	Sample	Animal species	Number of samples	Name of indicator	Study method	Positive
Akmola	Serum	Cattle	97	FMD NSP	ELISA	-
	Serum	Pigs	5		ELISA	-
Aktobe	Serum	Cattle	3		ELISA	-
Karaganda	Serum	Cattle	14		ELISA	-
Kostanay	Serum	Cattle	150		ELISA	-
	Serum	Small ruminants	30		ELISA	-
Mangistau	Serum	Cattle	2		ELISA	-
	Serum	Small ruminants	3		ELISA	-
	Serum	Camel	3		ELISA	-
Pavlodar	Serum	Cattle	139		ELISA	-
	Serum	Small ruminants	145		ELISA	-
North Kazakhstan	Serum	Cattle	145		ELISA	-
	Serum	Small ruminants	145		ELISA	-
Total ELISA:			881			0
Akmola	Pathological material	Cattle	50	FMD RNA	PCR	-
Aktobe	Pathological material	Cattle	4	FMD NSP	PCR	-
Karaganda	Pathological material	Cattle	21		PCR	-
Kostanay	Pathological material	Cattle	5		PCR	-
Mangistau	Pathological material	Cattle	2		PCR	-
	Pathological material	Camel	3		PCR	-
North Kazakhstan	Pathological material	Cattle	12		PCR	-
Total PCR:			97			0

Epizootic monitoring of wild animals

- Epizootic monitoring of wild fauna is carried out on the reserve fund of hunting grounds, assigned hunting farms, specially protected natural areas, as well as in other areas where wild animals live in order to detect infectious diseases:
- Monitoring of FMD among susceptible animals of wild fauna is carried out as part of the annual epizootological survey in order to issue a veterinary opinion on the well-being of the territory

Table 6

№	Animal species	Zone 5 with vaccination		Zone 5 without vaccination	
		Suspectable	Studied/ result	Suspectable	Suspectable
1	Alces alces	3706		2345	2/negative
2	Suis scrofa	19399	14/negative	21925	14/negative
3	Cervus elaphus askanicus	29585	7/negative	55805	31/negative
4	Cervus elaphus	9428		2158	
5	Cervus elaphus	0		1441	
6	Saiga tatarica	3000		839001	23/negative
7	Ovis ammon	1859		684	
8	Capra sibirica	16364			
	Total:	**83341**	**21/negative**	**923359**	**70/negative**

Socio-economic consequences of FMD

- In total, in 2011, 7851 heads of sick farm animals were destroyed in 7 outbreaks, including 2024 heads of cattle and 4790 heads of small ruminants, in all cases type O was established. For destroyed animals, their owners are reimbursed for the cost in the amount of 170,451.8 thousand tenge or 699,633 thousand euros.
- In 2012, 10 FMD outbreaks were registered in three regions, 6752 heads of sick and contact animals were seized and destroyed using the stamping-out method, while the market value in the amount of 656,118.8 thousand tenge was reimbursed.
- In 2013, 2295 heads of cattle were destroyed in 3 FMD outbreaks, the amount of compensation amounted to 291,505,816 tenge.
- In 2022, 25 heads of cattle were destroyed in one outbreak, the amount of compensation was 8,040,000 tenge.

Approximate calculation of the economic efficiency of veterinary measures for 1 tenge costs amounted to 22.02 tenge.

Activities aimed at strengthening veterinary services

- At the initiative of the Ministry, from March to September 2021, two missions of international experts of the World Organisation for Animal Health for the Republic of Kazakhstan took place, another GAP mission and harmonization of the legislation of the Republic of Kazakhstan in the field of veterinary with international standards and the Mission to support veterinary legislation in the Republic of Kazakhstan. During the specified time, through online meetings, discussions were held on the activities of the veterinary service of Kazakhstan in order to assess the veterinary system and veterinary legislation.

- Among other things, as part of the Action Plan (Roadmap) for reforming the veterinary system, it is planned to implement measures to delimit powers between levels of government, digitalize the activities of the veterinary service, automate the collection, transmission and processing of data in the field of veterinary, train personnel and increase wages of veterinarians.

Funded by the European Union

eufmd
european commission for the control of foot-and-mouth disease

Sustainable development goals, UN-SDGs. EuFMD's programme has a main focus on

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