

# ЭПИЗООТИЧЕСКАЯ СИТУАЦИЯ БЕШЕНСТВА ЖИВОТНЫХ В РЕСПУБЛИКЕ ТАДЖИКИСТАН

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## EPIZOOTIC SITUATION OF ANIMALS IN THE REPUBLIC OF TAJIKISTAN

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**Абстрактный:** В статье обобщены результаты изучения эпизоотической ситуации бешенства животных в республике Таджикистан. Установлено, что южные регионы республики наиболее неблагоприятны по бешенству, собаки являются основным источником заражения бешенством в республике. Из исследованных в 2012-2022 г. проб патологического материала, положительными были, на южные области приходится 92,3 % случаев заболеваемости и лишь 7,7% в северные регионы.

**Abstract:** The article summarizes the results of a study of the epizootic situation of animal rabies in the Republic of Tajikistan. It has been established that the southern regions of the republic are the most unfavorable for rabies; dogs are the main source of rabies infection in the republic. Of the pathological material samples examined in 2012-2022, the southern regions accounted for 92.3% of morbidity cases and only 7.7% in the northern regions.

**Key words:** Animal rabies, diseases, epizootic situations, cattle, cats, dogs.

**Ключевые слова:** Бешенства животных, заболевания, эпизоотической ситуации, крупный рогатый скот, кошки, собаки.

The territory of the Republic of Tajikistan is an endemic zone for rabies infection, which is determined by the presence of natural-climatic, socio-economic and environmental prerequisites for the course of the epizootic process of natural and especially anthropourgic rabies.

Monitoring was carried out mainly in the southern regions of the republic; data and pathological materials were also received from the northern regions.

We processed statistical data from the State Veterinary Surveillance Service (SGVS), the National Center for Veterinary Diagnostics (NCVD), and the Republican Sanitary Epidemiological Station (RSES).

The aggravation of the epizootic situation in recent years is associated with another cyclical rise in the incidence of rabies in animals, of which 92.3% are in the southern regions and only 7.7% in the northern regions of the republic, which gave us reason to continue to study the characteristics of the spread of this disease in the southern regions republics. The disease is characterized by long-term problems with rabies, due to the presence of active stationary foci of natural rabies, in which the infectious agent constantly circulates. The largest number of rabies cases over the past 10 years have been registered in the same regions and cities in the south of the republic. At the same time, it should be noted that new foci of rabies have appeared on the territory of other previously prosperous administrative territories, which indicates an expansion in the number of troubled areas in the southern regions.

A study was conducted of positive rabies cases from 2012 to 2022 (Fig. 1).

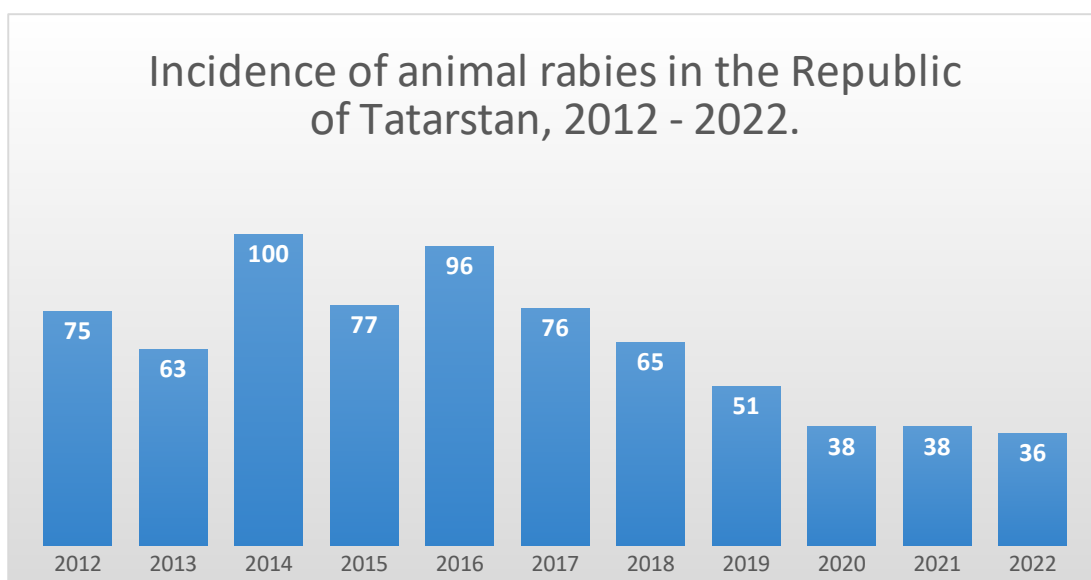


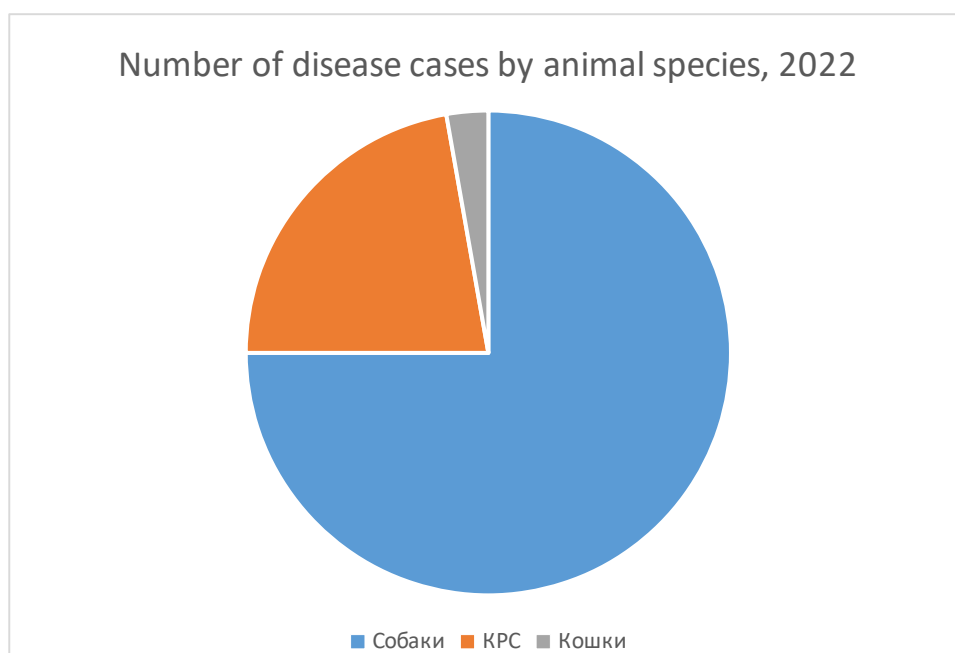
Fig.1. Incidence of animal rabies in the Republic of Tatarstan, 2012 - 2022.

According to Fig. 1, it can be seen how an increase in incidence is replaced by a decrease. This is due to various reasons: improved sanitary education, vaccination, reduction in the number of stray animals, etc.

However, issues such as the disposal of animal corpses remain unresolved, which is especially important for urban settlements where the population density of small domestic animals is high and there are no burial grounds, there is poor organization of work on registration and certification of animals, and insufficient coverage of domestic animals with preventive immunization.

During this period, there is a tendency for periodic outbreaks of the disease. Thus, there was a surge in rabies cases in 2014 (100), 2018 (65). In the period 2019-2022, there was a decrease in the number of unfavorable points for rabies (36).

Analysis of statistical data on the registration of animal rabies in the territory of the RRP in 2022. made it possible to reveal that in the structure of morbidity the first place was occupied by dogs (75%), the second by cattle (22.2%), and the third by cats (2.8%).



Rice. 2. Number of disease cases by animal species, 2022.

Studies of samples of pathological material (brain, ammon's horns) were carried out comprehensively using light and fluorescent microscopy. In case of obtaining a questionable or negative result from microscopy, biological tests were performed on white teenage mice, as well as ELISA and PCR.

Analysis of cases by animal species in 2022 Table 1

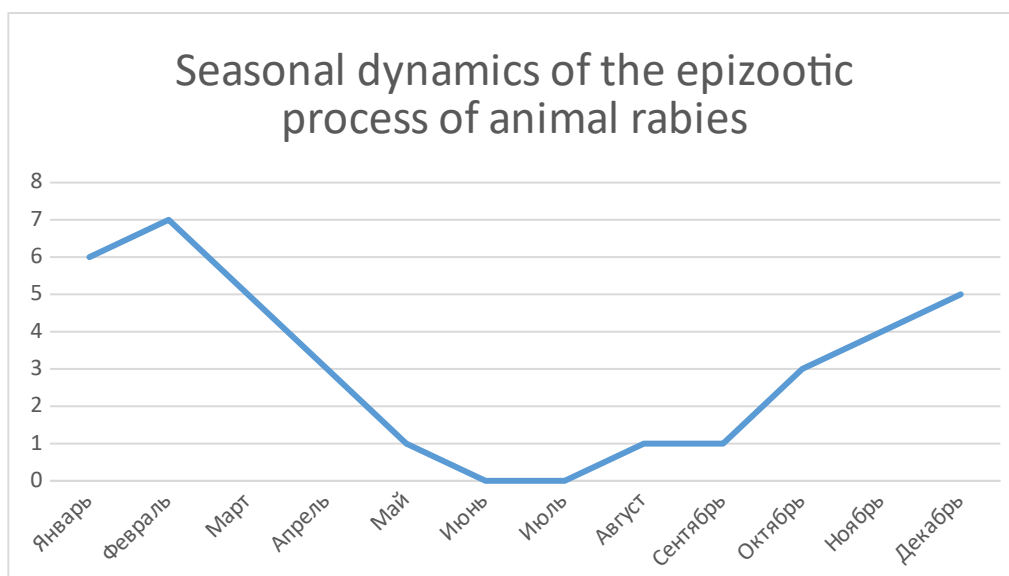
п /	Name of animals	Quantity of goods received	Of these, positive		
			Histology	ELISA	PCR
1	Dogs	27	12	17	27
2	КРС	8	4	6	8
3	Cats	1	0	0	1
4	TOTAL:	36	16	23	36

As a result of the studies, it was found that 16 out of 36 samples tested were positive using histology; Babes-Negri bodies were not detected in samples from the cat using this method. To compare the research results, we conducted additional studies using ELISA and PCR. In ELISA we received 7 more positive results. It follows that ELISA has better specificity and sensitivity compared to

histology. And according to the PCR results, 36 positive results were identified, which is 13 samples more than in the ELISA. Therefore, PCR is the most sensitive and specific method (Table 1).

When conducting PCR studies, the rabies virus was detected in all samples. This suggests that PCR is the most effective diagnostic method when other methods fail to detect the virus and therefore PCR is the most optimal method for confirming the diagnosis.

The study of seasonal dynamics showed that the epizootic process of rabies occurs year-round with pronounced increases in the autumn-winter and winter-spring periods, which is due to the biology of the reproduction of wild carnivores (Fig. 3).



Rice. 3. Seasonal dynamics of the epizootic process of animal rabies

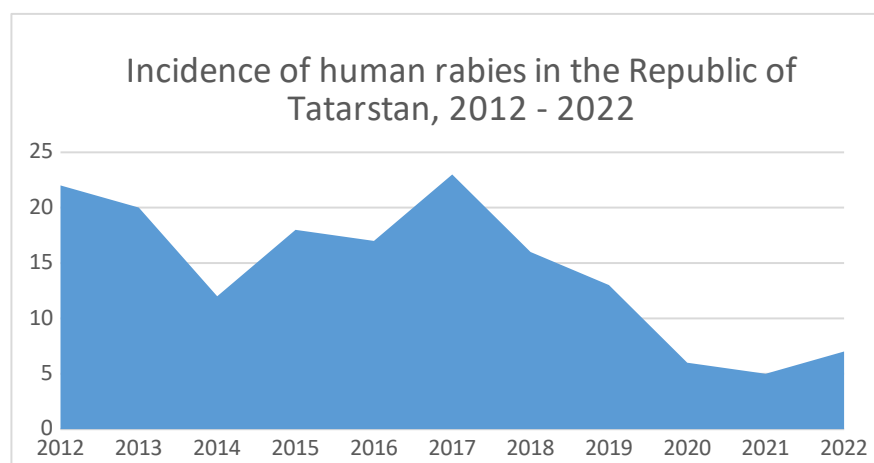
To maintain the epizootic of the rabies virus, the natural geographical features of the area of the study area are also influenced, namely the presence of a ravine-gully system with a large number of tugai forests, creating favorable conditions for the reproduction of wild carnivores - the main sources of natural rabies.

Epizootological monitoring of rabies in the country allows us to confirm the fact of a natural alternation of ups and downs of the epizootic. At the same time, new features of the epizootic situation are obvious, associated with an

increase in the number of dogs, cats and wild carnivores. Stray, neglected dogs and cats naturally concentrate in the places richest in easily accessible food: on the outskirts and in the immediate vicinity of populated areas. The habitats of wild carnivores have approached these same places. Foxes and wolves, for example, have become quite common in suburban landscapes. In such conditions, the number of reports of detection of cases of rabies in dogs, cats, foxes, and wolves in cities and large populated areas is growing.

According to the State Veterinary Surveillance Service and the Republican Sanitary Epidemiological Station, it is known that outbreaks of infection are registered throughout the republic, incl. previously prosperous areas (Fig. 1, 4).

According to our research, it was found that from 2002 to 2022, 159 people died from hydrophobia (Fig. 4).



Rice. 4. Incidence of hydrophobia in people in the Republic of Tatarstan, 2002-2022.

To successfully combat rabies, it is necessary to have sufficient funding and implement a set of organizational and economic measures with proper scientific support for the problem.

Conclusion. It has been established that the southern regions of the republic are the most unfavorable for rabies; dogs are the main source of rabies infection in the republic. Of the pathological material samples examined in 2012-2022, the

southern regions accounted for 92.3% of morbidity cases and only 7.7% in the northern regions.

Rabies in the Republic of Tajikistan remains a huge problem, because... Every year, unfavorable points for rabies are registered, incl. in previously prosperous regions of the republic.

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