

## Prevalence and prevention measures of pyroplasmidosis in Karakalpakistan

*\*Kudaybergenov Timur Yaqip uli*

*A first- year master's student at the Faculty of Veterinary and Zootechnics, Nukus Branch of Samarkand State University of Veterinary Medicine.*

*\*Scientific supervisor: Mavlanov Sobirjon Ibadullaevich  
Veterinary medicine sciences Dr. Professor*

### Annotation

Piroplasmidosis, commonly referred to as "tick fever," is a parasitic disease that affects a wide range of animals, including livestock and domestic pets. These parasites are transmitted through the bite of infected ticks and can cause serious health problems in affected animals. In this article, we will explore the spread of piroplasmidosis and the crucial preventive measures that can help mitigate its impact on animal populations. The huge role of leading scientists in the study of protozooses. the development of methods of therapy and prevention, as well as immunobiological pathogen properties.

Key words : Protozoa , vectors , fauna, therapy , prevention taking , drugs , piroplas , midges , pathogens morphology , tick, biology .

The main task of livestock breeders of the republic of Uzbekistan is to regularly and in sufficient quantities provide the population with livestock products, and the industry with raw materials. Livestock farms experience significant losses in connections with mortality and decreased productivity of animals from a number of infectious and invasive diseases. Among invasive diseases, protozoa are the most insidious diseases, the causative agents of which are transmitted to animals by certain types of pasture blood-sucking ticks. Equine Piroplasmosis is a blood-borne protozoal infection of horses caused by *Theileria (Babesia) equi* and/or *Babesia caballi*. Equine Piroplasmosis is present in South and Central America, the Caribbean (including Puerto Rico), Africa, the Middle East, and Eastern and Southern Europe.

In recent years, there has been an intensive increase in the number of livestock due to an increase in their numbers in the private sector and the number of farms. Since 2003, in all sectors of the economy of the republic, the number of cattle is about 800 thousand heads and sheep - more than 3.5 million. Accordingly, the republic ranks first in the number of sheep and goats among all subjects of Uzbekistan and is among the 10 subjects with the largest number of cattle. The scientific activity of the staff of the



laboratory of protozoology under the leadership of T.Kh. Rakhimov (1969-1993) was aimed at studying the epizootic situation of protozoal diseases of farm animals, biology, morphology of pathogens and the development of means and methods of therapy and prevention. As a result, more than 30 recommendations and instructions for veterinarians have been developed. which to this day is guided practically.

The scientific research work of Professor A. Gafurov was aimed at studying the epizootological situation of piroplasmid diseases of animals, the biology and morphology of the causative agents of the disease, and the fauna of vectors as well as development of means and methods of therapy and prevention. As a result, the epizootic situations of animal protozooses in the Republic have been brought under control, the most effective means and methods for the treatment and prevention of piroplasmosis have been developed using diamidine, uezbicarb, polyamidine, polycarb, hyperimmune serum and their combinations in combination with symptomatic and hematopoietic agents.

1. Tick Control: The primary mode of transmission for piroplasmidiosis is through ticks. Controlling tick populations is crucial. This can be achieved through habitat management, such as clearing tall grass and bushes, and the use of acaricides (tick-killing chemicals) on livestock and in tick-prone areas.

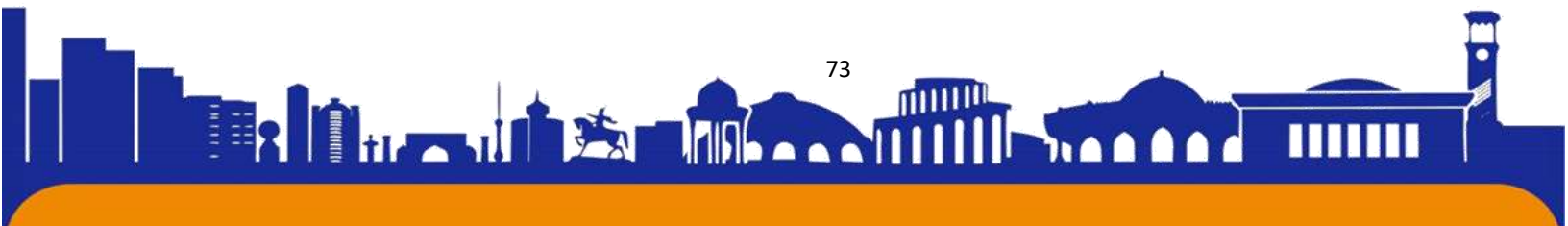
2. Livestock Management: Proper livestock management practices, such as keeping animals in tick-free zones, regular tick checks, and using tick repellents, can reduce the risk of infection.

3. Vaccination: In some regions, vaccines are available for certain piroplasmidiosis-causing organisms. Vaccinating susceptible animals can be an effective preventive measure.

4. Quarantine and Movement Control: Implementing quarantine measures and restricting the movement of livestock from infected to uninfected areas can help contain the spread of the disease.

5. Education: Raising awareness among farmers, veterinarians, and the general public about the disease, its transmission, and preventive measures is essential.

6. Research and Surveillance: Regular monitoring of tick populations and disease prevalence in livestock is crucial for early detection and intervention.





7. Climate and Environmental Factors: Understanding how climate and environmental factors influence tick populations and disease transmission is important for long-term prevention and control strategies.

After an incubation period of five to 28 days, clinical signs may include fever, anemia, yellowing of the mucous membranes (jaundice), dark brown or red-tinged urine, collapse and death in severe cases. Horses that survive the clinical phase of the disease continue to carry the parasite in their red blood cells. These persistently infected horses pose a risk for infection to other horses. Stress, such as racing, heavy exercise, or transport, may increase the levels of parasite present in the blood of the infected horse, thereby increasing the risk of disease spread

### **Diagnosis**

Equine piroplasmiasis is diagnosed by a serologic test. In the United States, testing is performed by a complement fixation (CF) and enzyme-linked immunodiffusion antibody (ELISA) test for both causative organisms.

Tests are used in parallel, as CF more readily detects acute disease while ELISA is more sensitive for detecting chronic infection. As a regard with a treatment has been recently developed to treat *Theileria equi* infections. Positive horses can be enrolled in a state-federal approved treatment program. Treatment with an anti-prozoal drug, Imidocarb, is performed at the owner's expense and by a USDA-accredited veterinarian under the observation of a state or federal animal health official. The horse is quarantined for the entire length of treatment.

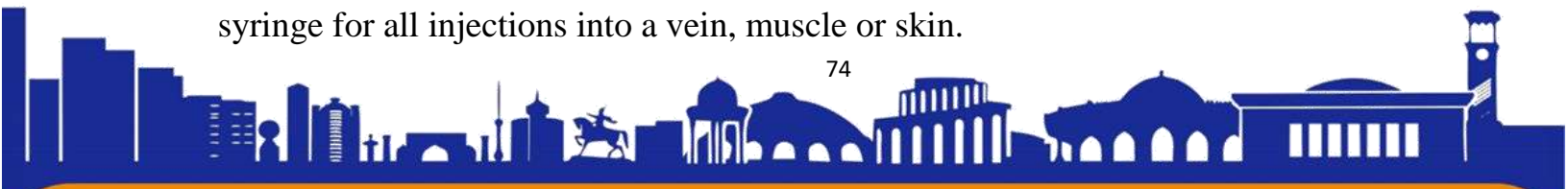
### **Prevention**

As we know, Equine piroplasmiasis is a blood-borne disease, it is more helpful to monitor for the presence of ticks on horses. If ticks are found, consult a veterinarian as to the best tick-prevention approaches in your area. As well as , contact a veterinarian if animals show signs of fever, jaundice, decreased appetite or weight loss.

In order to prevent piroplasmidiosis, we need take some steps as followings:

- \*has shared close contact with an infected horse,
- \*may have become infected by the use of shared needles, syringes, dental, surgical or tattooing equipment, or
- \*is the nursing offspring of a positive or exposed horse.

As farmers need to bear in mind that they should Always use a sterile needle and syringe for all injections into a vein, muscle or skin.





ISSN (E): 2181-4570 ResearchBib Impact Factor: 6,4 / 2023

- Disinfect all dental, tattooing and surgical equipment between horses.
- Remove all debris and blood with soap and water before disinfection.
- Administer only commercially licensed blood products.
- Use a sterile needle each time when puncturing a multidose medication bottle.

Consult a veterinarian to demonstrate how to use sterile technique when drawing up medications.

-Monitor for the presence of ticks on horses. If ticks are found, consult a veterinarian as to the best tick-prevention approaches in your area.

-Contact a veterinarian if a horse shows signs of fever, jaundice, decreased appetite or weight loss.

Exposed horses will be placed under quarantine and retested for the disease after 45 to 60 days. If found negative at that time, the quarantine will be released. Educating livestock owners, pet owners, and the general public about the risks associated with piroplasmidiosis and the importance of tick control measures can contribute to better disease prevention.

**In conclusion**, it is important to pay attention to the creation of new effective a drug based on local raw materials with therapeutic and preventive properties to get rid of these disease in the farmland. Piroplasmidiosis poses a significant threat to animals, especially in regions where ticks are prevalent. The spread of this parasitic disease can have severe economic and health implications for livestock and pet populations. Preventive measures, including tick control, vaccination, regular health monitoring, and public awareness, play a vital role in reducing the incidence and impact of piroplasmidiosis. By taking proactive steps to prevent the spread of this disease, we can protect our animal companions and the livelihoods of those who depend on healthy livestock.

#### Used literature:

1. Lerman, Z., Ran-Radnitz, D., Roth, Z., Werner, D., 2007. "Sustainable Livestock Sector Development. Technical Report.
2. Faculty of Agriculture, Hebrew University of Jerusalem, Ministry of Agriculture and Rural Development, Center for International Agriculture Development Cooperation (CINADCO), Ministry of Foreign Affairs, Center for International Cooperation (MASHAV), Jerusalem. Accessed on April, 2021: <https://www.researchgate.net/publication/305333347>







3. Uzbekistan Sustainable Livestock Sector Development 14. Lerman Z- Agricultural Development in Central Asia: A Survey of Uzbekistan, 2007-2008. Eurasian Geography and Economics. 49 (4): 481-505, 2008. doi: 10.2747/1539-7216.49.4.481 15. Oripov M, Davlatov S-Current status development prospects of livestock in UZ, Asian J Multidim Res 2018
4. Shapiro, B.I., Gebru, G., Desta, S., Negassa, A., Nigussie, K., Aboset, G. and Mechal, H. 2015. Ethiopia livestock master plan. ILRI Project Report. Nairobi, Kenya: International Livestock Research Institute (ILRI). Accessed on April 2021 <https://core.ac.uk/download/pdf/132678194.pdf>
5. Trushin E, Carneiro F - Poverty Reduction and Economic Management (PREM) Network - Changing for the Better: The Path to Upper-Middle-Income Status in Uzbekistan. Economic Premise Series - The World Bank June 2013, paper n. 119. Accessed on April 2021 <http://documents1.worldbank.org/curated/er/215821468318334282/pdf/782500BRID EP1190Box0377332B00PUBLICO.pdf> 18. World Bank, 2021.
6. The World Bank Data-Bank. Data extracted from <https://www.worldbank.org/en/country/uzbekistan>, accessed on April, 2021
7. Yusupov, Y.B., Lerman, Z., Chertovitskiy, A.S., Akbarov, O.M., 2010. Livestock Production in Uzbekistan: Current State, Issues, Prospects. In: Review in the Context of Agricultural Sector Development Trends. UN Development Programme, Tashkent.
8. "Veterinary Parasitology" by M.A. Taylor and R.L. Coop.
9. "Veterinary Medicine: A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs, and Goats" by O.M. Radostits

