



Dromedary (Camelus Dromedarius — One-Humped) And Bactrian (Camelus Bactrianus — Two-Humped) Camels: Differences In Parasitic Diseases And The Main Reasons For These Differences.

Xalilova Lobar Umarovna, Navoiy davlat Universiteti 03.00.06 - Zoologiya

Mutaxassisligi 2- bosqich doktoranti

E-mail: muhammadabdimuminov7@gmail.com, Tel: (94) 482 29 39

Saparov Kalandar Abdullayevich, Nizomiy nomidagi TDPU Tabiiy fanlar fakulteti dekani, b.f.d., professor.

Abstract: Parasitic diseases of camels (*Camelus dromedarius* and *Camelus bactrianus*), genetic characterization and analysis of their zoonotic risk. Camel farming is an important sector supplying meat, milk and wool to the economies of many countries, especially Uzbekistan and Central Asia. However, parasitic diseases prevalent among camels not only reduce animal productivity but also pose a serious threat to human health.

Keywords: *Camelus dromedarius*, *Camelus bactrianus*, *Toxoplasma gondii*, *Neospora caninum*, *Hyalomma filaria*, *Dictyocaulus filaria*, Nematodiru, MERS- CoV,

Introduction. During the feeding process of camels in our republic, it is an important and urgent issue to identify and analyze the parasites that harm them. The territory of our republic is particularly suitable for camel breeding, with vast desert pastures allowing them to graze freely and over long distances. The geographical structure of our country is also suitable for camel raising. It is also noteworthy that camels are highly resistant to diseases. There are distinct distribution differences in parasitic diseases between single-humped and double-humped camels. Considering the relatively low number of camels compared to other animals and their extensive use in agriculture and industry, it is necessary to analyze their diseases and continuously conduct scientific research. Research methodology. In scientific studies, parasitological, helminthological, ecological, biometric, statistical and comparative analysis methods were used. In the process of studying the conditions of feeding camels, the existing problems, the differences in the mutual organism of one- and two-humped camels, and the ecological and evolutionary adaptation, various differences were found in their susceptibility to various parasites and their disease.

Analysis and results. In our country, research work on the care of camels, increasing their head number with deep control, and studying their invasive and infectious diseases has not been carried out comprehensively. Therefore, it is important to determine the species composition of camel parasites, to assess the epizootological condition of parasitoses. Also, the fact that parasitic diseases significantly affect the population of camels and their productivity indicators indicates that the issue is urgent. Dromedary (*Camelus dromedarius* — single-humped) and Bactrianus (*Camelus bactrianus* — two-humped) camels are susceptible to various parasitic diseases due to their habitat and biological characteristics.

1. Effects of habitat and environmental factors:

- **Dromedaries:** Live mainly in hot and arid climates (Iran, Saudi Arabia, Africa). Blood-sucking insects and heat-resistant protozoal infections (for example, *Toxoplasma gondii*) are common in these areas.

- **Bactrianus:** Lives in colder and more temperate climates (Central Asia, China). Helminths (worms) found in pastures with high humidity are more common in them

2. It has been found that the main types of parasites differ in camels with one and two humps.



Table 1. Differences in the main types of parasites

Parasite type	Dromedary (One-humped)	Bactrianus (Two-humped)
Protozoans (Simple Animals)	Toxoplasma gondii and Neospora caninum are very common (up to 15-20%).	Toxoplasma gondii occurs, but the extent of distribution may vary from dromedaries due to environmental conditions.
Lungworms	<i>Dictyocaulus filaria</i> is more common and is mostly transmitted when kept with sheep.	They also have pulmonary helminths, but species composition depends on regional humidity.
Gastrointestinal helminths	Species adapted to arid climates predominate.	Nematodirus and other gastrointestinal helminths have been reported in large numbers.
External parasites (Mite)	<i>Mites belonging to the genus Hyalomma</i> are common and can be carriers of viral diseases (such as MERS-CoV or skin diseases).	Mite species and subcutaneous parasites adapted to cold climates may be more irritating.

3. Disease indicators and effects

- Toxoplasmosis in dromedaries: These camels are found to contain a lot of *T. gondii* antibodies, which indicates that they are close to human areas and have an indirect relationship with cats. (4)
- Helminthiasis in Bactrianus: Studies show that gastrointestinal helminths (such as *Trichostrongylus*) in two-humped camels can have a stronger effect on productivity than dromedaries, as they are often grazed in wet pastures.

Comparative analysis of parasites in Dromedary and Bactrianus camels

Since the Dromedary (one-humped) and Bactrianus (two-humped) camels live in different geographical and climatic conditions, the type and degree of occurrence of parasitic diseases in them varies.

1. Lungworms (*Dictyocaulus* species) Lungworms found in camels are morphologically and genetically similar in these two species, but their sources of distribution may differ:

- In dromedaries: *Dictyocaulus filaria* is more common and it is mainly transmitted when kept together with small horned animals (sheep-goats). Research shows that this parasite in dromedaries has 99% genetic similarity to strains in sheep.
- In Bactrianus: Studies conducted in China and Central Asia have confirmed the presence of *D. filaria* in bactrianus. However, in cold climates, the life cycle of the parasite is slightly slower. (2)

2. Simple animals (*Toxoplasma* and *Neospora*)

These parasites are found in both camel species, but there is information on their location in the body and methods of detection:

- *Toxoplasma gondii*:

In Dromedaries: In studies conducted in southern Iran, 15% to 6.6% of dromedaries have a positive result at the molecular level (via DNA) gave. The parasite mainly accumulates in the muscles of the brain and neck. (1) In Bactrianus: Studies among Bactrianus camels in China he also confirmed that they are infected with this parasite.

- *Neospora caninum*: Dromedaries have a prevalence rate of about 3.3%.
o It is also found in Bactrianus, but less studied than in dromedaries.(3)



In recent years, the following differences can be distinguished based on the study of the latest scientific works on camel breeding, sources and general parasitological analysis:

Table 2. Morphological and Genetic Differences

Feature	Dromedaries (Hot climate)	Bactrians (Cold climate)
The main source of the parasite	Sheep, goats, and wild cats.	Sheep, goats, and wild dogs (wolves).
The period of occurrence of the disease	More in winter and spring (when humidity increases).	Active throughout the year, but also during the summer months when humidity is high.
Localization of the parasite	Brain, neck muscles and lungs.	Lungs and gastrointestinal tract.
Tashqi parazitlar	<i>Hyalomma mites are common.</i>	There are more cold-resistant mite species and subcutaneous plants.

Summary and Recommendations

Regardless of the type of camel, parasites reduce their productivity and pose a zoonotic (human-infected) risk.

- For dromedaries: It's important to limit contact with cats and avoid eating raw meat.
- For bactrianus: It is necessary to strengthen the prevention against lung worms (antigelminthic).

The main difference in damage by parasites is not seen in their type, but in the intensity of their spread. While dromedaries are more susceptible to protozoal (single-celled) diseases and virus-carrying mites, Bactrianus are more susceptible to various internal helminths (worms) in humid climates.

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