

DETERMINATION AND EVALUATION OF TRICHOPHYTIC DISEASE IN PEDIGREE CATTLE BY SEASONS

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Abstract

This article addresses the identification and epidemiological assessment of trichophytosis among pedigree cattle across different seasons of the year. The study was conducted in several regions of Uzbekistan. Analysis results indicated that the highest incidence of the disease occurred in late winter and early spring. Seasonal changes, air humidity, and zoohygienic conditions significantly influence the spread of trichophytosis. Based on the research findings, recommendations were made for early diagnosis of the disease and the enhancement of preventive measures depending on the season.

Keywords: Trichophytosis, pedigree cattle, seasonality, dermatophytosis, epidemiology, Uzbekistan, disease prevalence.

Introduction

Trichophytia (Trichophytia) is an infectious skin disease caused by dermatophytic fungi (Trichophyton spp.) and is predominantly common among young and pedigree cattle. The disease manifests itself in inflammation, itching of the skin and shedding of woolen fibers. Trichophytia causes great economic damage as well, since it adversely affects not only productivity, but also the immunity of animals.

Climatic conditions in Uzbekistan, that is, sharp differences in temperature and humidity in the seasons of the year, are considered an important epidemiological factor for the prevalence of trichophytia. Therefore, this article aims to study the seasonal variability of the disease in pedigree cattle.

Materials and methods: The study revealed the seasonality of 420 heads (from the Red-Steppe, Simmental and Holstein breeds) as a result of epizootic studies of cattle of 2,289 heads in large livestock farms in the Kashkadarya, Samarkand and Andijan regions for 2023–2024.

Diagnosis was carried out as follows: clinical examination: detection of dry, gray crust and hair loss on the skin surface.

Laboratory analysis: microscopic investigation and extraction of Trichophyton culture

Statistics: incidence percentage by seasons, comparison by graph and table.



Study results: Trichophytic disease was most commonly detected during the study during the fall and winter months: Keeping indoors during the winter season, air humidity and limited air circulation increased the spread of the disease. And in the autumn, the air begins to cool and a high indicator is recorded due to the weakening of zooprotective measures. **The seasons of the year were classified as follows:** Spring (March–May), Summer (June–August), Autumn (September–November), Winter (December–February).

The seasonality of the disease of trichophytia was studied. The fact that animals infected with trichotia were recorded by month of the year were analyzed. A number of our scientists have argued that the disease peaks in the winter and mainly calves under the age of one year old get sick. As a result of the study of the seasonality of the disease, it was found that during 2023, the disease is more common mainly in the autumn and winter seasons.

In the course of our research, trichophytia was observed in cattle over one year old in July. [Usmonova.X.J. 1;11-12.]. The appearance of fungus in the body of an animal, the season season also influenced the development of the disease. The causative agent of trichophytia was very common in the winter months, but rarely in the summer season. From January to March, intensive development and growth of trichopytons was observed, while in May-August there was a slowdown in the intensity of growth. In September-October, the fungi again began to develop more actively, showing clinical signs characteristic of the disease of trichophytosis.

In 2023-2024, the most common cases of trichotyia in cattle of different ages are mainly in October, February of the winter season, March-April in the spring season, and June of the summer season.

According to the results of the study of seasonality of trichophytic disease in cattle in the conditions of some farms of the Republic, the maximum morbidity rate was observed in March-October, when intensive development and growth of trichotia was observed, while in May-August there was a decrease in growth. It turned out that in September-October, fungi develop more actively and develop strong pathological processes. As a result of the warming of the weather, the decrease in relative humidity and, of course, the enrichment of the diet with blue mass in the spring-summer, a decrease in the incidence of trichophytia was observed.

Diagram-1: In determining the seasonal dynamics of trichophytic disease in cattle of the "red desert" breed, "Yurt rizqi breeding" LLC, "Ochilova" consisting of breeds of Kasbi and Mirishkor district ("Kyzyl-Chol") of the Kashkadarya region ("Kyzyl-Chol")

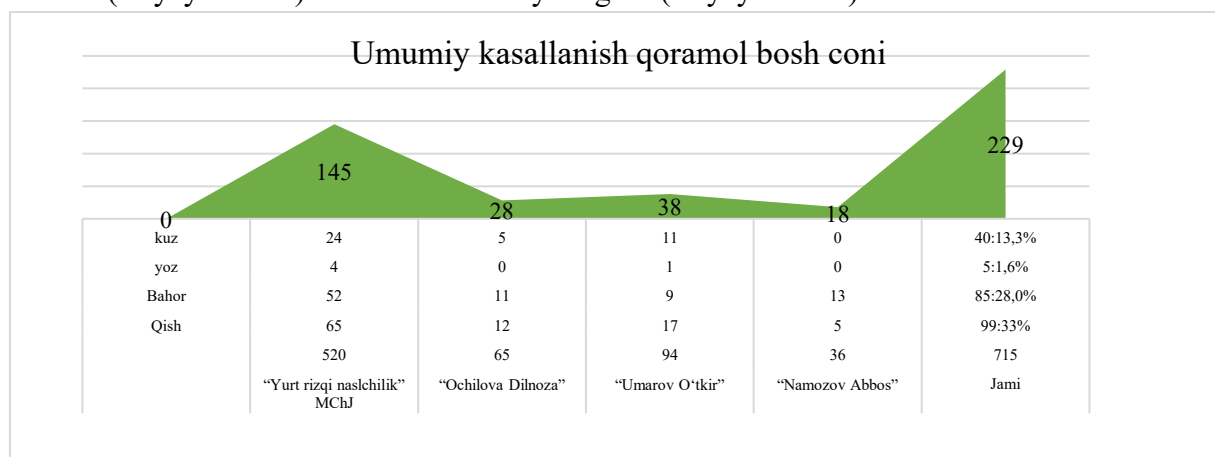


Figure 1: seasonal dynamics of the disease of trichophytic in cattle of the "Red Steppe" breed.

During the study of seasonality in breeding farms "Dilnoza", "Umarov Utkir", "Namozov Abbas", the disease was observed in 99 heads of cattle in the winter season, and the seasonality rate on farms was 33%. [Usmonova.X.J. 2;49-51.]. In the spring season, a total of 85 heads of cattle were damaged, with a seasonality rate of 28%, in the summer season a total of 5 heads of cattle with a seasonality rate of 1.6%, in the autumn season, a total of 40 heads of cattle, with a seasonality rate of 13.3%.

In conclusion, the seasonality of the breeds was observed more in the winter and spring seasons in Kasbi and Mirishkor district ("Kyzyl-Steppe") of the Kashkadarya region.

According to the results of the study of the seasonality of trichophytic disease in cattle under the conditions of farms of Pstdargam and Payariq district farms ("Simmental") of Samarkand region, the maximum morbidity rate was observed in February-March, when intensive development and growth of trichophytic was observed, while in May-August there was a decrease in growth. It turned out that in October-November fungi again actively develop and form a strong pathological process.

Umumiy kasallanish qoramol bosh conl						
0	18	12	15	10	14	69
kuz	5	0	3	3	3	14:4,6%
yoz	0	0	1	0	1	2:0,6%
Bahor	4	2	3	2	3	14:4,6%
Qish	9	10	8	5	7	39:13%
	33	22	30	33	33	151

Figure 2: seasonal dynamics of the disease of trichophytic in cattle of the "Simmental" breed.

Diagram 2: In determining the seasonal dynamics of trichophytic disease in cattle of "simmental" breeds, the disease was observed in 39 cattle in the winter season in breeding farms of Pstdargam and Payariq districts of Samarkand region ("Simmental"), consisting of the breeds "Dilrabo farm", "Rustam Dilshad Dalasi", "Rajabov Suyar Nurbagi", "Mirvali Abror Begali", "Munavvar Ona", and the seasonality rate on farms was 13%. Studies found that a total of 14 heads of cattle were damaged in the spring season, with a seasonality rate of 4.6%, in the summer season a total of 2 heads of cattle with a seasonality rate of 0.6%, in the autumn season a total of 14 heads of cattle, with a seasonality rate of 4.6%.

In conclusion, in the breeds of Pstdargam and Payariq district ("simmental") of Samarkand region, a higher level of seasonality was observed in the winter season.

According to the results of the study of the seasonality of trichophytic disease in cattle under the conditions of farms of Shahrighan district farms ("Holstein") breeds of Andijan region of the Republic, the maximum morbidity rate was observed in February-March, when intensive development and growth of trichophytosis was observed, while in May-August there was a decrease in growth. It turned out that in October-November fungi again actively develop and form a strong pathological process.

Diagram 3: Determination of the seasonal dynamics of trichophytic disease in cattle of the "Holstein" breed consists of breeds of "Gulistan radiant prospect", "Possible cattle", "Inomjon fayz",

"Shermat baba" consisting of breeds of Shahrikhan district farms ("Holstein") On breeding farms, the disease was observed in a total of 57 heads of cattle during the winter season, and the seasonality rate on farms was 19%.

Umumiyl kasallanish qoramol bosh conl					
	36	47	28	11	122
kuz	5	11	6	1	23:7,8%
yo3	2	1	0	0	4:1,3%
Bahor	11	14	9	4	38:12,6%
Qish	18	21	13	5	57:19%
	480	630	280	33	1423

Figure 3: seasonal dynamics of the incidence of trichotyctic disease in cattle of the "Holstein" breed.

A total of 38 heads of cattle were damaged in the spring season, with a seasonality rate of 12.6%, in the summer season a total of 4 heads of cattle with a seasonality rate of 1.3%, in the autumn season, a total of 23 heads of cattle, with a seasonality rate of 7.8%.

To summarize, in the Shahrikhan district ("Holstein") breed of Andijan region, the level of seasonality was observed more in the winter-spring seasons.

Discussion: Studies conducted have shown that the prevalence of trichophytic disease in pedigree cattle has a significant correlation with the seasons of the year. The analysis showed that the highest incidence of the disease was recorded in the winter season (33%) and spring (28.0%), while relatively low rates were recorded in the autumn and summer (13.3% and 1,6%). This condition is explained by the fact that the immunity of animals changes under the influence of seasonal factors, especially in the cold and humid period, it weakens.

Seasonal differences in the spread of the disease are related to the conditions of animal fattening, humidity, exposure to sunlight, the hygienic condition of shelters, and the density of animals. For particular, in the autumn and winter seasons, insufficient ventilation, poor sanitation and lack of sunlight create favorable conditions for the development of the disease. These results confirm the conclusions noted in the previous scientific literature. For example, the studies conducted by N.S. Kasymov (2018) and A.Kh. Ubaydullayev (2021) also noted that trichophytosis is very common precisely during the cold seasons.

Also, among young animals, the disease is highly common, which is explained by the fact that their immune system is not yet fully formed. Intensive growth, ample nursing of the organism of pedigree cattle, and in some cases, the action of stress factors will aggravate the occurrence of the disease.

Based on the results discussed, it is worth noting that prevention and control of trichophytosis should be carried out in a seasonally adapted to the season. Especially in the autumn and winter months, airing in the barns, strengthening disinfection measures, the use of immunocompromised agents and timely vaccination are important factors in preventing the spread of the disease.



In addition, the complex use of dermatological examinations, laboratory diagnostics (microscopy and mycological seeming) methods in the detection of diseases increases diagnostic reliability. During the studies, these approaches have yielded high efficiency, making it possible to detect trichophytia and seasonal monitoring of its spread dynamics.

In general, seasonal estimation of the incidence of trichophytic disease in pedigree cattle plays an important role in veterinary practice in terms of optimizing prevention strategies, preventing economic losses, and ensuring animal health.

Conclusion:

Trichophytia disease is of seasonal nature among pedigree cattle, it is characterized by a high prevalence in winter. A key role in the spread of the disease is played by environmental and zoohygienic factors. Seasonal planning of diagnostic and preventive measures increases productivity. The introduction of a seasonal monitoring system will help prevent the spread of trichophytonia. The decrease in weather temperature, as well as the lack of certain vitamins in the body, led to a further rise in the incidence rate. Therefore, the disease of trichophytia has a seasonality, and a high incidence rate was observed during the winter months. The reason why it is so common in the winter time is the lack of insufficient vitamins A, D3, E, F in the diet with a sufficient amount of beet mass, the grazing of animals in the winter season, in addition, the failure to carry out disinfection, disinsection and disazification measures in time, causes damage to cattle with the causative spores. The number of cattle infected with trichophytosis during these months was recorded 3 times more than in summer months.

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