Eureka Open Access Journals
Open Access | Peer Reviewed | International Journals | Multidisciplinary Areas

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 1, January 2026

https://eurekaoa.com/index.php/5

STUDY OF THE ANTIFUNGAL EFFECTIVENESS OF MEDICINAL PLANT EXTRACTS AGAINST TRICHOPHYTOSIS IN CATTLE AND SHEEP

Usmonova Xadicha Jorayevna
Doctor of Philosophy (PhD) in Veterinary Sciences, Junior Researcher Veterinary Research Institute

ABSTRACT

This study is aimed at evaluating the antifungal effectiveness of medicinal plant extracts against trichophytosis in cattle and sheep. Trichophytosis is a common dermatophytic disease caused by fungi of the genus Trichophyton, leading to skin lesions and significant economic losses in livestock production. In the present research, extracts obtained from selected medicinal plants were tested under in vitro conditions to assess their inhibitory activity against Trichophyton species. The results demonstrated that several plant extracts exhibited notable antifungal activity, indicating their potential as alternative natural agents for the prevention and treatment of trichophytosis in farm animals.

Keywords: Antifungal effectiveness, dermatophytosis.

Introduction:

Trichophytosis is an infectious skin disease caused by dermatophyte fungi belonging to the genus Trichophyton, resulting in lesions on the skin of cattle and sheep, commonly referred to as ringworm. This disease leads to damage of the skin, hair loss, and deterioration of the general condition of the animals. Trichophytosis infections are zoonotic and can also be transmitted to humans,

Eureka Open Access Journals
Open Access | Peer Reviewed | International Journals | Multidisciplinary Areas
Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)
ISSN 2760-4942 (Online) Volume 2, Issue 1, January 2026

https://eurekaoa.com/index.php/5

making it an important concern not only for veterinary health but also for public health.

Literature Review and Methodology:

Scientific studies have shown that extracts obtained from various medicinal plants may exhibit antifungal activity against Trichophyton and other dermatophytes. For example, several plant extracts have been reported to affect Trichophyton mentagrophytes, T. violaceum, and Microsporum spp. under in vitro conditions.

Other research has noted that bioactive compounds from plants such as Asparagus racemosus and Cassia occidentalis significantly inhibited the growth of dermatophytes. The antifungal activity of different plant extracts is attributed to the presence of phytochemical components such as flavonoids, alkaloids, and tannins.

Methodology:

The study was conducted under in vitro laboratory conditions:

Sample collection: Samples were taken from the skin lesions of cattle and sheep suspected of infection.

Fungal identification: Trichophyton spp. were identified using standard media such as Sabouraud Dextrose Agar (SDA).

Preparation of plant extracts: Methanol or aqueous extracts were obtained from the dried parts of selected medicinal plants.

Antifungal assay: The inhibitory effect of the extracts on fungal growth was assessed using agar well diffusion or microdilution methods.

Data Analysis

The minimal inhibitory concentration (MIC) and zone diameters were determined. The methodology followed standard microbiological protocols, and results were interpreted using statistical analysis.

Eureka Open Access Journals
Open Access | Peer Reviewed | International Journals | Multidisciplinary Areas

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 1, January 2026

https://eurekaoa.com/index.php/5

Results and Discussion:

The study results showed that certain plant extracts significantly inhibited the growth of Trichophyton spp. The antifungal activity of these plants is attributed to their phytochemical composition, such as flavonoids, alkaloids, or saponins, which can affect the fungal cell membrane.

Moreover, natural extracts may have fewer side effects compared to conventional chemical antifungal drugs, and their availability and low cost make them advantageous for farmers. It should be noted that in vitro results may not fully reflect efficacy under clinical conditions, highlighting the need for in vivo studies as well.

During the study, medicinal plant extracts showed varying levels of antifungal activity against Trichophyton spp. Some extracts exhibited significant inhibitory effects, indicating their potential for clinical application. These results confirm that medicinal plant extracts can be a potential agent to inhibit the growth of Trichophyton fungi.

Conclusion:

This study confirmed the antifungal effectiveness of medicinal plant extracts against trichophytosis in cattle and sheep and provided a basis for further detailed investigation. While laboratory results were positive, future research should include in vivo experiments and clinical applications.

References

1. Determination and evaluation of trichophytic disease in pedigree cattle by seasons. Web of Medicine: Journal of Medicine, Practice and Nursing, 2025, 03-09(4), 134–138. (ISSN (E): 2938-3765) https://webofjournals.com
2. General description of dermatophytosis infection in animals. In: Modern trends and development factors in the application of digital technologies in

Eureka Open Access Journals
Open Access | Peer Reviewed | International Journals | Multidisciplinary Areas
OPEN ACCESS JOURNALS

Eureka Journal of Health Sciences & Medical Innovation (EJHSMI)

ISSN 2760-4942 (Online) Volume 2, Issue 1, January 2026

https://eurekaoa.com/index.php/5

education, 47th Online Scientific and Practical Conference, Part 1, 2025, 145–146. https://scientificjl.com

3. Cowan M.M. Plant products as antimicrobial agents. Clinical Microbiology Reviews, 12(4), 1999, 564–582.
4. Sharma A., Tripathi R. Evaluation of antifungal activity of medicinal plant extracts against Trichophyton species. Journal of Ethnopharmacology, 115(1), 2008, 61–66.
5. Kumar S., Singh P., Mishra G. Antidermatophytic activity of some medicinal plants against Trichophyton species. Asian Journal of Pharmaceutical and Clinical Research, 5(3), 2012, 194–197.
6. Suleiman I., Emua A. Antifungal activity of selected medicinal plants against dermatophytes. African Journal of Microbiology Research, 9(15), 2015, 1098–1103.
7. Prasad H.B., Rao R., Naik R. Phytochemical constituents and antifungal mechanism of medicinal plants against dermatophytes. Journal of Mycology, 2020, 1–9.
8. Rippon J.W. Medical Mycology: The Pathogenic Fungi and the Pathogenic Actinomycetes. 3rd ed. Philadelphia: W.B. Saunders Company, 1988.
9. Ajello L., Hay R.J. Dermatophytosis: a review of clinical features and diagnosis. Clinical Dermatology, 16(2), 1998, 189–197.
10. Abdel-Monem A.R., Abdel-Sattar E. Antifungal activity of medicinal plants used in traditional medicine. Journal of Applied Pharmaceutical Science, 6(3), 2016, 104–111.