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DIRECT DETECTION OF *DERMATOPHILUS CONGOLENSIS* FROM SKIN SCABS USING POLYMERASE CHAIN REACTION

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Statement of the Problem: *Dermatophilosis* or *cutaneous streptothricosis*, caused by *D. congolensis* is an acute or chronic disease which affects mostly ruminants and horses. The disease is of great economic significance as it results in considerable loss due to reduced production, downgrading of hide, increased rate of culling and death. Rapid and accurate diagnosis of dermatophilosis is required for a prompt and proper management of the condition. Cultural isolation of the organisms from skin scabs and then identification by PCR takes minimum of 48 to 72 hours. Hence, the aim of this study was to standardize the PCR technique using DNA extracted directly from the skin scabs collected from lesions.

Methodology & Theoretical Orientation: Skin scabs were collected from animals suspected for dermatophilus dermatitis such as matting of hairs, thick scabs with cracks and fissures and were confirmed using conventional bacteriological examination. Samples were collected from cattle, buffaloes, goat, horse and camel with suggestive lesions. DNA extraction was carried out from the cultures as well as directly from the scabs and PCR was carried out using the species specific primers targeting 16S rRNA of *D. congolensis*. DNA sequencing was done and homology searches were performed with the NCBI database.

Findings: Polymerase chain reaction yielded specific 500 bp amplicons from all the skin scab samples from the positive cases of cattle, buffaloes, goats, horses and camel as well as from cultures. Results could be obtained within five to six hours when scabs are used directly, whereas it took 48–72 hours for cultural isolation and subsequent amplification. Moreover direct amplification of 16S rRNA gene from scab samples was useful in the diagnosis of infection, especially in cases of recovering animals, chronically infected animals or wet scab where the organisms generally exist as scattered *cocci* rather than the characteristic tram-track pattern. This will make the diagnosis easy and also gives a rapid confirmatory diagnosis.

Recent Publications

1. Ananda Chitra M, Jayalakshmi K, Ponnusamy, Manickam R and Ronald B S M (2017) *Dermatophilus congolensis* infection in sheep and goats in delta region of Tamil Nadu. Vet.World 10:1314–1318.
2. Oladunni F S, Oyekunle M A, Talabi A O, Ojo O E, Takeet M I, et al. (2016) Phylogenetic analysis of *Dermatophilus congolensis* isolated from naturally infected cattle in Abeokuta and Ilorin, Nigeria. Vet. Med. Sci. 2:136–142.
3. Tresamol P V, Saseendranath M R, Subramanian H, Pillai U N, Mini M, et al. (2015) Identification of *Dermatophilus congolensis* from lower leg dermatitis of cattle in Kerala, India. Rev. Sci. Tech. 34:849–854.
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Biography

P V Tresamol has her expertise in the field of Veterinary Epidemiology and Preventive Medicine. During the period of 24 years of service as a Faculty in the Kerala Veterinary and Animal Sciences University, she was associated with Teaching, Research and Extension activities in her field. She has handled 20 research projects as Principal/Co-Principal Investigator and has guided 40 PG Scholars and two Doctorate Scholars as Major/Minor Advisor. She was instrumental in organizing seminars, training programmes, health camps and disease outbreak investigations in the university. She has attended several national and international training programmes/seminars and published around 120 research articles in various national and international journals. Currently she is in the Associate Dean of College of Veterinary and Animal Sciences, Mannuthy, Thrissur, Kerala.

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