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Ethnoveterinary practices for management of ringworm infection in crossbred cows at field conditions: A case report

Dr. P Ravi, Dr. S Durga and S Ramakrishnan

Abstract
Ringworm infection is caused by invasion of cutaneous keratinized epithelial cells and hair follicle by a certain keratinophilic fungi. A total of twelve crossbred cows aged between two to six years was suffered with skin lesions were observed in farmers field. The microscopic examination of skin lesions revealed positive result of *Trichophyton* sp. in all affected animals. The ringworm infected cows were topically applied with mixture paste of Aloe Vera leaves, garlic, turmeric (*Curcuma longa* L.) and neem leaves. The mixture of paste is applied over the infected areas daily two times for 14 consecutive days. The affected animals were showed complete recovery within 21 days after application of paste of Aloe Vera mixture. The present study was concluded that ethno-veterinary practices is more economical to farmers under field conditions for treatment of ringworm infection in crossbred cattle.

Keywords: Ringworm infection**,** *Trichophyton,* ethno-veterinary, crossbred cattle

Introduction
Ringworm (dermatophytosis) is an infection of the superficial, keratinized structures of the skin and hair of man and animals. The disease is caused by a group of keratinophilic filamentous fungi called dermatophytes in the Genera *Trichophyton*, *Microsporum* and *Epidermophyton* (Gudding and Lund, 1995) [5]. The transmission between hosts usually occurs by direct contact with a symptomatic or asymptomatic host (Murray *et al*., 2005) [7]. The typical lesion in cattle presenting 10 to 50 mm patches of hair loss, desquamation and crust formation usually confined to the head, neck and sometimes, other parts of the body surface (Akbarmehr, 2011) [2]. The ethno veterinary practices involve the traditional beliefs, knowledge, practices and skills pertaining to healthcare and management of livestock diseases. India is endowed with a huge potential of medicinal plants and their uses that provide a wide contribution to the treatment of human and livestock aliments. This paper is aims to focuses on the ethno-veterinary management against ringworm infections in cross bred cows

Case history and observations
Twelve suffered crossbred cows aged between two and six years were observed skin lesions consistent with dermatomphytosis in the field conditions. The crossbred cows were managed under intensive system and in close contact with each others. The skin lesions were dry alopecic spots, circular and greyish in colour. Skin samples were collected from affected animals by cleaning it with cotton wool soaked in 70% ethyl alcohol, scraping of the hair follicles and crusts were also collected from the margin of the lesions as described by Robert and Pihet (2008) [9]. One or two drops of 20% KOH (potassium hydroxide) were placed on a microscopic slide and a small amount of the sample was added and the slide was gently passed through a low flame and covered by a cover slip. After two hours, the specimen was examined for the presence of arthrospores and hyphae under a light microscope according to Ellis *et al*. (2007) [4]. Mycological examination of skin lesions revealed positive result of *Trichophyton* sp. in all affected animals.

Treatment and Discussion
The affected cows were topically applied with Aloe Vera gel (two leaves), paste of garlic *(Allium sativam*), cloves (4 Nos.), turmeric (*Curcuma longa* L.) (50 gms) and pulp of neem leaves (50 gms) per animal per day twice daily for 14 consecutive days. Dermatomycosis is the common name given to the diverse superficial infection of keratinized layer of the skin

(epidermis) and its appendages (hair fibers) in domestic and wild animals caused by a group of closely related mycelial fungi (Sharma *et al.*, 1990) [10]. The potency of Aloe vera in curing ringworm might be due to increasing the ability of internal immunity of the treated animals by a newly discovered compound in Aloe is called acemannan, that will strengthen the natural resistance by boosting T- lymphocyte cells that aid the immune system (Lawrence Plaskett and Chem, 2000) [6]. Beside that Aloe vera curative effect was prompted by the anti-inflammatory components, including several glycoproteins and salicylates, and substances that growth of skin and connective tissues. The active compound curcumin is present in turmeric has anti-inflammatory, antioxidant, antitumor, antibacterial and antiviral activities, which may assist to treat skin inflammation (Aggarwal *et al*., 2007) [1]. In Indian ethno-veterinary use, the garlic bulb is used for fungicidal and have highest persistent antifungal activity (Barkai-Golan, 2001) [3]. Fresh garlic has sulfur content of approximately 3mg/gm and various active principles sush as Allin, Allicin, Sativin I&II, Scordinines has excellent antifungal infection in animals. Neem leaves have sulphur-containing compounds such as cyclic trisulphide and tetrasulphide isolated from matured neem leaves have antifungal activity against *Trichophyton mentagrophytes* (Pant *et al*., 1986) [8]. The affected animals were showed complete recovery within 21 days after application of paste of Aloe Vera mixture.

Conclusion

In conclusion, this study showed that the application of these medicinal plants was highly effective treatment for dermatophytosis in crossbred cattle. Further studies, using different concentrations and periods of treatment, are required to determine the exact effect in crossbred cattle.

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