



A CASE
STUDY

Treatment of foot and mouth disease ailing cattle – A comparative field study

U. UMADEVI¹ AND T. UMAKANTHAN

Members of the Research Forum

Associate Author :

¹Department of Botany Specialized with Plant Biotechnology, The Standard Fireworks Rajasthinam College for Women, Sivakasi, VIRUDHUNAGAR (T.N.) INDIA
Email : dr.umadeviumakanthan@gmail.com

AUTHOR FOR CORRESPONDENCE :

T. UMAKANTHAN

Veterinary Hospital, Sattur, VIRUDHUNAGAR (T.N.) INDIA
Email : sciencepot1614@gmail.com

Abstract : In a season of 3 months, sixty cattle of different age, breed and sex clinically presented for foot and mouth disease were comparatively studied and treated giving allopathic and ethno-medicine. Ten of the sixty were given antibiotics and symptomatic allopathic treatment for 3 days. Remaining fifty were orally administered with the finely ground mixture of *Mentha arvensis*, *Curcuma longa*, *Areca catechu* and *Piper betel* daily once for 3 days. Recovery rate was found to be 50 per cent and 90 per cent in the former and latter group.

Key words : Cattle, FMD, Allopathic, Ethno-medicine

How to cite this paper : Umadevi, U. and Umakanthan, T. (2016). Treatment of foot and mouth disease ailing cattle – A comparative field study. *Vet. Sci. Res. J.*, 7(2) : 129-131, DOI : 10.15740/HAS/VSRJ/7.2/129-131.

Paper History : Received : 13.08.2016; Accepted : 25.09.2016

INTRODUCTION

Foot and mouth disease is an economically important disease in cattle characterized by vesicles in foot and mouth is a severe systemic viral infection. No treatment exists for FMD (Kristin J. Holtgrew-Bohling, 2016). Most affected animals recover but are left debilitated by the disease. An ethno-medicinal treatment comparatively found highly effective in recovering FMD ailing cattle is proposed in this paper.

RESEARCH METHODOLOGY

In field, in a particular season of 3 months, sixty cattle ailing with FMD, aged between 6 months and 4 years, different in breed and sex, were recorded. Symptoms such as dullness, loss of appetite, excessive drooling/frothing of saliva, blisters in mouth and/or foot, smacking lameness and decreased milk production since 2 to 4 days noticed. Examination revealed pyrexia and vesicles in tongue, hard palate, dental pad, lips, gums, muzzle, coronary band, interdigital cleft, teats in lactating cows. Thus tentatively diagnosed as Foot and mouth disease.

Ten of the sixty formed group A and remaining 50 formed group B and treated using allopathic and ethno-medicines, respectively.

Treatment :

Group A animals given different antibiotics analgesics and supportive treatment for 3 days.

Group B given orally the finely ground mixture made of 25 g of each *Mentha arvensis*, *Curcuma longa*, *Areca catechu* and *Piper betel* daily once for 3 days.

RESULTS AND DISCUSSION

Five and forty five of the group A and B animals showed revival from the disease. Thus recovery rate was 50 per cent and 90 per cent.

Foot-and-mouth disease (FMD) is a highly communicable viral disease caused by an *Aphthovirus*. It primarily affects cloven-hooved animals of the order Artiodactyla. Livestock hosts include cattle, pigs, sheep and goats. Spread through direct contact or aerosolized virus via respiratory secretions, milk, semen, and ingestion of feed from infected animals (meat, offal, milk).

Feet vesicles take longer to heal and are susceptible to bacterial infection leading to chronic lameness. Secondary bacterial mastitis is common due to infected teat vesicles and resistance to milking. After vesicular disease develops, cattle quickly lose condition and milk yield, often agalactia (Umadevi *et al.*, 2015), which can persist chronically. In a adult susceptible population, morbidity reaches 100 per cent with rare fatalities. Outbreaks can severely disrupt livestock production.

As already noted, no treatment exists for FMD. Ethno-veterinary therapies also are largely ineffective against infectious diseases including FMD (Caterina Batello *et al.*, 2004).

Despite the citations above, the search of an effective remedy for FMD ailing animals found a comparatively effective ethno-medicinal treatment. Following is basis which supports the selection of herbs and combination for this effective formulation and treatment.

Mentha arvensis: Mint possesses anti-bacterial and anti-inflammatory property (Aggarwal and Kunnumakkara, 2009).

Curcuma longa: Curcumin exhibit anti-viral, anti-bacterial, anti-fungal, anti-oxidant and anti-inflammatory properties (Colleen and Helen, 2014). Topical application of aqueous extract of turmeric delayed corneal wound healing in rabbits indicative of 'cortisone-like' anti-inflammatory activity (Kerry and Simon, 2003).

Areca catechu: is an anti-viral and anti-fungal (Kee C. Huang, 1999).

Piper betle: Leaf has powerful antiseptic properties. Also has analgesic and cooling effects. It is locally applied for inflammatory swellings (Chopra, 2006).

Summary :

A potential and applicable ethno-medicinal treatment for FMD ailing cattle is proposed and advocated for therapy.

Acknowledgement :

The authors thank cattle owners, field veterinarians, traditional practitioner, laboratory technicians, The Director, Department of Animal Husbandry and Veterinary Services, Tamil Nadu, The Principal, SFR college for women, Sivakasi, Tamil Nadu for their various help.

LITERATURE CITED

Aggarwal, Bharat B. and Kunnumakkara, Ajaikumar B. (2009). Molecular Targets and Therapeutic Uses of Spices: Modern Uses for Ancient Medicine, World Scientific, Singapore. 375.

Caterina Batello, Marzio Marzot and Adamou Harouna Toure (2004). The Future is an Ancient Lake. FAO international working group on biological diversity for food and agriculture. 63

Chopra, R.N. (2006). *Indigenous Drugs of India*, Academic Publishers, 2nd Ed., Kolkata. 371

Colleen Sen and Helen Sabe (2014). Turmeric: Great Recipes Featuring the Wonder Spice that Fights Inflammation and Protects Against Disease, Agate Digital.

Kee C. Huang (1999). *The Pharmacology of Chinese Herbs*, 2nd Ed., CRC Press, USA. 435

Kerry Bone and Simon Mills (2003). *Principles and Practice of Phytotherapy: Modern Herbal Medicine*, 2nd Ed., Elsevier Health Sciences. 903

Kristin J. Holtgrew-Bohling (2016). *Large Animal Clinical Procedures for Veterinary Technicians*, 3rd Ed. Elsevier, Missouri. 491

Umadevi, U., Madhu, Mathi P, Saranya, K. and Umakanthan, T. (2015). Successful treatment of Agalactia in post food and mouth disease affected cows. *Internat. J. Food, Agric. & Vet. Sci.*, **5** (2) : 58-59.

7th
Year
★★★★★ of Excellence ★★★★★