

Immunomodulation, antioxidative and therapeutic study of *Withania somnifera* (WS) in subclinical mastitis in crossbred cattle

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Abstract

Mastitis refers to an inflammation of the mammary tissue and is a common disease in dairy cattle. It is alone disease that causes much greater loss to the dairy industry. Medicinal plants are being used in Indian traditional medicine (Ayurveda) since ancient time for treating various ailments of human as well as animals. The herbal medicines have gained importance due to their less toxicity, lesser side effects and being organic in nature. Milk samples of apparently healthy HF crossbred cows were investigated for subclinical mastitis (SCM) by the various diagnostic tests viz. CMT, pH, EC, SCC and cultural examination in the laboratory. Effect of WS on oxidative stress related biochemical parameters viz. malondialdehyde, reduced glutathione and catalase were investigated and for immunomodulation effect immunoglobulins and phagocytic activity of PMN cells were also evaluated. For therapeutic study of WS eight cows were administered with oral alcoholic extract of WS @ 125 mg/kg body weight and Intramammary 500 mg WS extract dissolved in 5 ml NSS twice daily for 7 days. The therapeutic study results showed that there was a significant improvement recorded in the CMT point score, SCC, pH and EC after treatment as compare to pre-treatment results. The oxidative marker study revealed that the herbal alcoholic extract possesses good anti oxidative property and act as a potent anti-oxidant. Further this herbal extract also showed significant improvement in post treatment mean values of IgG, IgA and IgM in comparison to their respective pre-treatment mean values, and the phagocytic activity and phagocytic index were increased significantly. The herbal extract of WS possesses good potential of immunomodulation, antioxidative property and also showed therapeutic property to treat the subclinical mastitis. Therefore the herbal extract of WS can be used for treatment of SCM.

Biography

J.P.Kachhawa, presently serving as senior assistant professor at Rajasthan University of veterinary and animal Sciences, Bikaner-334 001, Rajasthan, India. He is expertise in the veterinary clinical medicine, ethics and jurisprudence and has more than 8 years of teaching and research experience. He is continuously doing research on herbal medicine in field of veterinary

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medicine for last 5 years and developed herbal medicine used for therapy of dermatological disorders in cattle, buffaloes, dogs and camel; diarrhoea in calves, cattle and buffaloes; mastitis in cattle, buffaloes and goats. Presently he is member of 7 scientific societies and published his works in several national and international reputed Journals.

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