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ACARICIDAL EFFECT OF A HERBAL SPRAY FORMULATION OF TOBACCO EXTRACT (NICOTINE) AND EUCALYPTUS OIL COMBINATION IN HOLSTEIN FRIESIAN CROSSBRED CATTLE

M.D. Meshram¹, M.D. Kulkarni², D.A. Pawalkar³, B.C. Ghumare⁴, P.K. Muluk⁵,
A.J. Pawar⁶

ABSTRACT

Livestock are highly vulnerable to tick infestation. The incidence in cattle, particularly in Holstein crosses is very high. The hematophagous living habit of ticks causes annoyance to the host, besides triggering anemia, reducing milk production, transmitting hemoparasitic infections, and predisposing the host to dermatophilosis. Severe infection might lead to death. Chemical acaricides fail to deliver promising results, because many species of ticks have developed resistance on account of their continuous and indiscriminate use. Alternately, herbal acaricides are eco-friendly, safe, efficacious, and free from the danger of developing drug resistance by the ticks. Phytochemicals like tobacco (nicotine) and eucalyptus oil have acaricidal effects. But, there is no study on the synergistic effect of these two phytochemicals on ticks. The present study was undertaken to evaluate the effect of an herbal acaricide formulation combining tobacco extract (nicotine) and eucalyptus oil mixture, on the health and productivity of tick infested Holstein Friesian crossbred cattle. The acaricide spray formulation was prepared by combining tobacco extract (nicotine) and eucalyptus oil mixture @ 10% each in ethanol base. The acaricide was tested on 18 tick infested *Holstein Friesian* crossbred cattle comprising 6 cows, 6 heifers, and 6 calves. Half of them under each category were treated with the formulation, while the rest half served as the control. The acaricide was sprayed on the infected animals by a hand sprayer during morning hours for three consecutive days. The treatment was repeated thrice at weekly intervals. The dislodgement of ticks started on the 4th day of the treatment, and the ticks disappeared from the body between 19-21 days post-treatment. Extermination of the ticks increased the hemoglobin concentration of the cows, heifers, and calves by 10.2%, 7.6%, and 6.0% respectively. Healing of the udder lesions enhanced the milk yield by 10.47% in the treated group as against a decline of 5.86% in the control animals. It is concluded that this new herbal acaricidal spray formulation holds promise for tick eradication in crossbred cattle at low cost.

KEY WORDS

Acaricide, Eucalyptus oil, Hemoglobin, Holstein-Friesian crossbred, Milk production, Tick infestation, Tobacco

Author attribution: ¹Professor, ³Assistant Professor, Preventive Medicine, ²Professor & Head, Clinical Medicine, ⁴Assistant Professor, Pharmacology & Toxicology, ^{5,6}MVSc Scholar, Krantisinh Nana Patil College of Veterinary Science (Maharashtra Animal and Fishery Sciences University), Shirval, Maharashtra, India- 412801. ²Corresponding author: drmdkulkarni@yahoo.in Date of Receipt: 09/09/2010, Acceptance: 26/07/2011.

