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COMPARATIVE EFFICACY OF FLUMETHRIN AND IVERMECTIN AGAINST TICK INFESTATION IN DEONI CATTLE

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ABSTRACT

Tick infestation is a frequently encountered problem in cattle with serious economic consequences. Many acaricides, available in the market are used to treat and control tick infestation in livestock. Ivermectin has been found to be a highly successful broad spectrum endectocide. But, its neurotoxic and ecotoxic potential is a cause of concern. In contrast, flumethrin is a relatively safer acaricide, and is effective against an extensive array of ectoparasitic infections, especially ticks that have developed drug resistance. There is no report on the comparative evaluation of these two acaricides in Indian livestock. The present study was undertaken to compare the efficacy of flumethrin and ivermectin on 50 Deoni bullocks infested with ticks (*Boophilus microplus*). The severity of the tick infestation was determined on a four point scale, and were grouped into three classes *viz.*, heavy infestation: 5-6 ticks/sq. inch (+++), moderate infestation: 3-4 ticks/sq. inch (++), and mild infestation: 1-2 ticks/sq. inch (+). Clinical examination of the animals revealed that the bullocks were heavily infested with ticks (+++) at the beginning of the experiment. The animals were divided into two treatment groups each consisting of 25 animals. Group A animals were administered flumethrin topically @ 1 ml/10 kg body weight. Group B animals were administered ivermectin subcutaneously @ 200 µg/kg body weight. The animals were observed for the density of ticks on 0th, 3rd, 10th, 30th and 45th day of treatment. In addition, blood samples were collected from the animals on 0th and 30th day, and analysed for haematological parameters *viz.*, blood haemoglobin concentration (Hb), packed cell volume (PCV%), and red blood cell (RBC) count. The study revealed that there was complete disappearance of the ticks from the body surface of the animals treated with ivermectin, on the next day of treatment. Similar situation was observed on the 20th day of treatment in the group treated with flumethrin. The animals treated with ivermectin were completely free from ticks with one treatment, whereas ticks appeared on the body surface of the animals (++) treated with flumethrin on the 45th day of treatment. There was significant ($P \leq 0.01$) improvement in haemoglobin concentration (Hb), packed cell volume (PCV%), and red blood cell (RBC) count in the ivermectin treated group on 30th day, while the haematological picture remained unchanged ($P \geq 0.05$) in the flumethrin treated group. It is concluded that ivermectin was a highly effective acaricide against tick infection in cattle. A single injection of ivermectin provided instantaneous relief to the animals from tick infestation with complete restoration of haematological indices. There was no recurrence of infection.

KEY WORDS

Blood parameters, Cattle, Deoni, Flumethrin, Ivermectin, Tick infestation

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