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Prevalence of sarcoptic mange in cattle in and around Jabalpur

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Abstract

The present study was undertaken for a period of 10 months i.e. between July 2017 and April 2018 to know the prevalence of sarcoptic mange in and around Jabalpur. Out of 684 cattle screened from various organized and unorganized sectors in and around Jabalpur, 112 cattle were showing signs of dermatological disorders and were selected for further study. Confirmation of sarcoptic mange was done by microscopic detection of *Sarcoptes scabiei* mite in the skin scraping. The overall prevalence of sarcoptic mange in cattle was found to be 4.5% and among dermatological disorders it was 27.67%. The age wise prevalence of sarcoptic mange was non significantly highest in age group of 0-6 months (28.23%). Gender wise prevalence was non significantly higher in female cattle (28.57%). Therefore, the present study confirms the presence of sarcoptic mange in cattle in and around Jabalpur. Although no significant correlation was observed in the age wise and gender wise prevalence.

Keywords: Sarcoptic mange, prevalence, dermatological disorders

Introduction

In the Indian subcontinent, dairy cattles are usually infested with several parasites, among which *Sarcoptes scabiei* infestation is the common and serious, problem; generally affecting sparsely haired parts of the body. Infestations generally located at the base of the tail, the inner thigh, under the neck and the brisket. It is recognised as one of most serious and contagious parasitic skin disease of dairy animals in the Indian subcontinent [1]. Animals in poor condition appear to be most susceptible for the disease. Several other factors like stress, overcrowding, poor nutrition, cold weather and immune suppression predisposes the animal for the disease [2, 3]. *Sarcoptes* mites burrow deep into the epidermis creating tunnels of up to 1 cm in length in which they feed and reproduce. Their burrowing and feeding activities cause inflammation and severe pruritus, loss of hair; excoriation, marked thickening and proliferation of the epidermal layer of the skin. Besides other pathological changes, decrease in feed digestibility, nutrient absorption and alteration in hepatic structure and function occurs [4].

Despite its importance, sarcoptic mange in cattle has not been given due attention and its prevalence in cattle has not yet been studied in this region. Therefore, a very scarce literature is available with respect to the epidemiological of sarcoptic mange in cattle. So, keeping in view the above facts, this study was aimed to study the prevalence of sarcoptic mange in cattle in and around Jabalpur.

2. Materials and Methods

The proposed work was conducted in the Department of Veterinary Medicine, College of Veterinary Science and Animal Husbandry, N.D.V.S.U., Jabalpur (M.P.). The study was conducted for a period of 10 months i.e. between July 2017 and April 2018. For this study, a total of 684 cattle were screened from various organized and unorganized sectors of Jabalpur. Complete history of all the cases was recorded including age, breed, sex and duration of illness. All the animals were clinically examined for the presence of pruritus, alopecia, erythema, excoriation, thickening and wrinkling of skin etc. Out of 684 cattle screened, a total of 112 with dermatological disorders were selected for the study. Skin scrapings were collected from these 112 cattle and confirmed by skin scrapings examination and microscopic detection of *Sarcoptes scabiei* mite. Skin scraping examination was performed as per the standard procedure for the detection of *Sarcoptes scabiei* mite [5]. Differences in the prevalence of mite between age groups and sex groups were tested for significance by chi-square test. A p-value of ≤ 0.05 was considered significant.

3. Results and Discussion

3.1 Overall prevalence of sarcoptic mange in cattle

The overall prevalence of sarcoptic mange in cattle was found to be 4.5% and among dermatological disorders it was 27.67%. The results of the present study correlated well with the findings of Nazir *et al.* [6] who reported a prevalence rate of sarcoptic mange as 3.33 per cent in buffaloes at a dairy farm in Jammu and Kashmir. However, higher prevalence rates were reported by Tikaram and Ruprah [2] who noted 28.5 per cent prevalence of sarcoptic mange in buffaloes while a lesser prevalence was reported by Augmas *et al.* [7] who recorded 1.6 per cent prevalence of sarcoptic mange in cattle of Ethiopia.

The results of present study revealed presence of sarcoptic mange in the cattle of in and around areas of Jabalpur, although there is variation in the prevalence rates with the results of previous workers. These differences might be attributed to the variation in management practices and environmental conditions at different localities. Differences in study design and methodology may also account for differences in estimating prevalence per cent. Moreover high stocking rates of the pastures, close contact and scarcity of grazing land are some of the factors on which spread of scab depends [9].

3.2 Age wise prevalence of sarcoptic mange in cattle

To study age wise prevalence of sarcoptic mange in cattle, total number of 112 cattle were categorised into three age groups. Highest prevalence of sarcoptic mange were recorded in cattle upto 6 months (28.23%) followed by 6-12 months and lowest being in cattle of more than 12 months of age (22.2%). Non-significant association was found between prevalence rate and age of animals.

These observations are in accordance with several other workers such as Jabeen *et al.* [8] who reported that the disease was recorded in 3.75% and 2.5% of buffaloes up to 1 year and above 1 year of age, respectively and Kotb and Rady [9] who found buffaloes under one year of age were the most affected (31.57%); however, buffalo older than five years showed the lowest infestation rate (8.77%) of disease. On the contrary, Augmas *et al.* [7] (2014) reported that prevalence of mange in cattle was 4.3% and 6.4% for less than two years and two and above years of age, respectively.

The higher prevalence of mange in young animals as compared to older animals may be due to unhygienic conditions, overcrowding, keeping young and adult animals together. Moreover, direct contact between mother and calves during sucking may contribute to the spread of mite. Furthermore, the higher incidence of sarcoptic mange in younger age could be due to their tender skin, dense hair coat and huddling tendency and relatively low level of immunity in younger cattle [6].

3.3 Gender wise prevalence of sarcoptic mange in cattle

Gender wise prevalence of sarcoptic mange in cattle showed higher prevalence in females (28.57%) as compared to male (25.71%). Non-significant association was found between prevalence rate and gender of animals.

Similar findings were observed by Nazir *et al.* [6] who reported that females showed a significantly higher prevalence rate (4.07%) than males (1.96%) and Augmas *et al.* [7] who reported that significant variation was detected between two sex groups and the prevalence of cattle mange mite was high in female (8%) cattle than male (2.7%). However, Kotb and

Rady [9] and Jabeen *et al.* [8] have reported that sex of cattle did not affect the prevalence of sarcoptic mange.

In Indian livestock industry more female cattle are reared in various organized and unorganized sector due to economic reasons and in general practices male calves are sold at very young age. Hence, the major component of the animals in present study comprised of female animals so it could be the contributing factor of higher incidence in female. Moreover, higher infestation rates in females may also be associated with different physiological stress conditions [7].

4. Conclusion

The present study confirms the presence of sarcoptic mange in cattle in and around Jabalpur, with an overall prevalence of 4.53 per cent. No significant correlation was observed in the age wise and gender wise prevalence. However, highest prevalence was observed in 0-6 months of age.

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