

PREVALENCE AND CHEMOTHERAPY OF SARCOPTIC MANGE IN BUFFALOES

M. AHMAD*, I. Q. KHAN**, G. M. GILL*, A. MAQBOOL**, S. ALI**

Dept. of Livestock and Dairy Development Punjab, Pakistan.

*Faculty of Veterinary Science. Univesity of Agriculture, Faisalabad, Pakistan.

SUMMARY

The prevalence and chemotherapy of sarcoptic mange in buffaloes was studied at Civil Veterinary Hospital, Faisalabad. Of 1377 buffalo accessions to Civil Veterinary Hospital over a period of one year (January 1996 to December 1996), sarcoptic mange was recorded in 96 (6.96%) animals. The prevalence was significantly higher (83.3%) among the animals below the age of one year than in animals over one year (16.6%). Sex had no bearing on the prevalence of the disease. The winter season was mostly associated with the occurrence of the disease (16.38%) followed by spring (6.38%) autumn (5.78%) and summer (0.36%). A single subcutaneous injection of Ivermectin B1 (Ivotek-Star laboratories) at the rate of 200 ug/kg affected a 100% clinical and parasitological cure within 20 days.

INTRODUCTION

Sarcoptic mange caused by *Sarcoptes Scabiei* var *bubalis* is a very common condition among buffaloes in Pakistan. Although the disease may occasionally terminate fatally (Kulkarni et al.,

1990; Satiji et al., 1981) the economic importance of sarcoptic mange stems mainly from its high prevalence associated with unthriftiness, reduced body growth and productivity (Gill et al., 1989). Scabies in human resulting from contact with water buffalo has also been reported (Chakrabarti et al., 1981). The present study was designed to determine the prevalence of sarcoptic mange in buffalo as well as to investigate the effects of host (age, sex) and also to determine the therapeutic effect of Ivermectin B1 (ivotek-star laboratories) in the treatment of sarcoptic mange in buffaloes

MATERIALS AND METHODS

The study was conducted at Civil Veterinary Hospital, Faisalabad during the month of January, 1996 to December, 1996. A total of 1377 buffaloes (of various age group) were brought to the hospital for treatment of different diseases. Of these 96 (6.96%) were found positive for sarcoptic mange. The month and season-wise prevalence of sarcoptic mange was recorded. For this purpose, the year was apportioned into 4 seasons with the following break up: winter (November through February), Spring (March, April). Summer (May through August), and autumn (September, October).

Collection and Examination of Skin Scrapings:

In suspected cases, the skin scrapings collected from the edges of the lesions in petridishes warmed at 38°C for approximately 2 minutes and then examined under a stereoscope microscope for the presence of various stages of life cycle of mites (Stoss, 1970; Soulsby, 1982).

Therapeutic Trials:

Thirty five buffalo-calves showing typical lesions of sarcoptic mange and found positive for mites on microscopic examination were randomly divided into two groups, taking 20 animals in one group (A) and 5 animals as untreated control in another group (B). Animals in group-A were treated with Ivermectin B₁ (Ivotek Star Laboratories) at the rate of 200 ug/kg body weight by subcutaneous route. The efficiency of

Ivermectin B₁ was evaluated on the basis of clinical and parasitological responses which were studied at day 10, 20 and 30 post-treatment and compared with infected control. Negative skin scrapings, gradual disappearance of gross lesions, stoppage of itching, smoothing of skin surface and regrowth of normal hair were taken as the criteria to assess the efficiency of Ivermectin B₁.

RESULTS

During the one year study period i. e. from January, 1996 to December, 1996, a total of 1377 buffaloes of various ages were brought to the Civil Veterinary Hospital, Faisalabad. Of these 96 were found positive for sarcoptic mange. The prevalence of sarcoptic mange was thus 6.96 percent.

Table I. Month-wise incidence of Sarcoptic mange in buffaloes.

Month	Total No. of animals examined	No. of animals affected	Percent infected.
January	163	28	17.17
February	120	30	25.00
March	157	10	6.36
April	125	8	6.40
May	124	2	1.61
June	129	0	0.00
July	178	0	0.00
August	122	0	0.00
September	63	4	6.34
October	58	3	5.17
November	60	5	8.33
December	78	6	7.69
Total	1377	96	6.96

Month-wise prevalence:

The month-wise prevalence of sarcoptic mange is presented in Table 1. The highest prevalence of mange was recorded in the month of February with an infection rate of 25 percent. The lowest incidence was recorded during the month of June, July and August being zero percent.

Chemotherapy:

The results of trials with Ivermectin B1 (Ivotek) showed that after the treatment with Ivotek clinical lesions started to disappear and there was new growth of smooth shining hair over the affected parts. All the treated animals showed complete (100%) clinical and parasitological recovery within 20 days and no complain or lesions were reported by the owners.

Table II. Season-wise incidence of Sarcoptic mange in buffaloes.

Season	Total No. of animals examined	No. of animals affected	Percent infected.
Winter (Nov. to Feb.)	421	69	16.38
Spring (Mar. to Aprl.)	282	18	6.38
Summer (May to Aug.)	553	2	0.36
Autumn (Sep. to Oct.)	121	7	5.78

Table III. Incidence of sarcoptic mange in relation to age and sex.

Total No. of animals examined.	No. of animals affected	Age		Sex	
		< 1 year	> 1 year	Male	Female
1377	96 6.96%	80 83.33%	16 16.66%	50 52.08%	46 47.90%

Season-wise prevalence:

The highest prevalence was recorded in Winter season i.e 16.68% whilst the lowest in Summer i.e. 0.36% (Table II). Sex did not effect the prevalence as well as severity of disease. The prevalence was higher in animals under one year (83.33%) than in animals over one year (16.66%) (Table III).

DISCUSSION

The overall prevalence of sarcoptic mange (Tables I & II) was 6.96%. The highest prevalence (25%) was observed in February followed by January (17.17%) and December (7.69%). No case of the disease was recorded in the months of June, July and August. These findings are consistent with those of Tikaram and Ruprah (1986) and Blood and Radostits (1989).

As regards seasonal impact on the disease frequency, the highest prevalence was recorded during the winter season (16.38%), while the lowest during summer season (0.36%). The results of the present study with respect to seasonal predisposition to sarcoptic mange are in accord with those of Guillot (1981), Tikaram and Ruprah (1986), Noor-Uddin et al. (1986) Maqbool et al. (1991) and Zarzara (1982). In fact, Basu et al. (1952) reported that mange in buffaloes is definitely seasonal and is almost restricted to a few months of the year viz. January to April. Sarcoptic mites have been found to survive better at 20-27°C than at 31-39°C (Tikaram and Ruprah, 1986), which may explain in part at least for the much higher prevalence in winter as compared to other seasons.

The prevalence of sarcoptic mange in relation to sex (Table III), indicated that this variable did not affect the prevalence as well as severity of infestation since animals of either sex were nearly equally affected. Animals under one year of age were more frequently affected (83.33%) than over one year (16.66%).

These findings are in congruence with those of Chakrabarti and Pradhan (1985) and Tikaram and Ruprah (1986). Since the disease spreads by direct contact, the higher prevalence in animals under one year of age could be due to their tender skin and huddling tendency.

The therapeutic efficiency of Ivermetin B1 in the present studies was 100%. Nearly similar results with this antiparasitic drug have been reported by previous workers (Soll et al., 1987, Gill et al.,

1989, Manurung et al., 1987) who observed that Ivermectin B1 was 99.3% to 100% effective against sarcoptic mange.

REFERENCES

- Basu, B. C., Menon, P. B., and Sengupta, C. M. (1952): Studies on the mange mites of livestock in India. *Indian Vet. J.*, 22: 143-149.
- Blood, D. C.; and Radostits, O. M. (1989): *Veterinary Medicine*. 7th ed., Bailliere Tindall, London.
- Chakrabarti, A., Chatterjer, A., Chakrarti, K., and Sengupta, C. M., (1981): Human scabies from contact with water buffaloes infected *Sarcoptes scabiei* var *bubalis*. *Ann Trop. Med. Parasitol.*, 75: 363-357.
- Chakrabarti, A., and Pradhan, N. R. (1985): Demodicidosis in livestock in West Bengal (India). *Intl. J. Zool.*, 12: 283-290.
- Gill, B. S., Singh, J., Gill, R. S., Singh, A., Kurhra, S. S. Rai, A., and Hussain, O (1989): Efficacy of Ivermectin against mange and gastrointestinal nematodes of buffaloes (*Bubalus bubalis*). *Vet. Parasitol.*, 31: 141-147.
- Guillot, F. S. (1981): Population, incidence of *Psoroptes ovis* (Acari: Psoroptidae) on stanchioned cattle during summer. *J. Med. Entomol.*, 18: 44-47.
- Kulkarni, D., Raghavan, R. S., Sangvikar, V. A. C., Suryanarayana, and Jalkar, V. D. (1980): A preliminary report on the efficacy of scabiezama lotion in the treatment of mange in buffalo-calves and dogs. *Indian Vet. J.*, 57: 591-592.
- Manurung, B., Beriajayh, J., and Stevenson, P. (1987): The efficacy of Ivermectin treating scabies and mange in buffaloes. *Pnyakit Hewan*, 19: 26-29.

- Maqbool, A., Hussain, S., and Amin, M. K. (1991): Efficiency of Trichlorophon (Negavon) against mange in cattle. *Pakistan J. Agri, Eng. Vet. Sci.*, 7: 22-24.
- Noor-Uddin, M., Gill, B. S., and Singh, K. B. (1986): Prevalence of clinical Sarcoptic and Psoroptic mange in buffalo in Punjab. *Buffalo J.* 2: 81-86.
- Satiji, K. L., Oatt, S. C., and Tikaram, S. M. (1981): Comparative efficiency of some acaricide in the control of Psoroptic mange in buffaloes. *Haryana Vet. J.*, 20: 125-128.
- Sloss, M. V. (1980): *Veterinary Clinical Parasitology*. 4th ed. The Iowa State Univesity Press Ames.
- Soll, M. D., Carmichael, I. H., Swann, G. E., and Scherer, H. (1987): Control of cattle mange in Southern Africa using Ivermectin. *Trop. Ani. Heth. Prod.*, 19: 93-102.
- Soulsby, E. J. L (1982): *Helminths, Arthropods and Protozoa of Domesticated Animals*. 7th ed. The Williams and Wilkins Co., Baltimore.
- Strickland, R. K., and Gerrish, R. R. (1987): Infestivity of *Psoroptes ovis* on ivermectin-treated cattle. *American J. Vet. Res.*, 48: 342-344.
- Tikaram, S. M., and Ruprah, N. S. (1986): Incidence of sarcoptic mange in buffaloes in India . *Trop. Ani. Hlth. Prod.*, 18: 86-90.
- Zarzara, M. (1982): Aetiology, epidemiology and clinical manifeatalion of mange in cattle. *Institutului de-cercetari Veterinare Sci. Biopreparate Pasteur*, 16: 101-109.