

PREVALENCE AND TREATMENT OF GOAT WARBLER IN TAUNSA AND BARKHAN AREA

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ABSTRACT

Prevalence of goat warbles (*Przhevalskiana silenus* Brauer larvae) was carried out on flocks in five villages at Taunsa (n = 455) and four at Barkhan (n = 431). The animals were examined for the presence of warbles during second and third week of November, 1993. The prevalence was recorded to be 35.4 and 84.2 per cent at Taunsa and Barkhan, respectively. The proportion of infested goats across the different villages at both the sites differed significantly. The efficacy of ivermectin against goat warbles was found to be 100 per cent.

INTRODUCTION

The Indian goat warble fly (*Przhevalskiana silenus* Brauer) is a widespread pest in hilly and semi hilly areas of Pakistan (Hussain *et al.*, 1981; Khan *et al.*, 1991; Khan *et al.*, 1994). The adult fly lays its eggs on goats during May-August. After hatching, the larvae penetrate into the skin through hair follicles and start travelling to the back of animal. During this travel, these larvae molt from 1st to 2nd and 2nd to 3rd stage. By mid-November, these larvae assemble underneath the skin and form small nodules, called warbles. The larvae make perforations in the skin for respiration and fall onto the ground. Circle is completed in one to one and a half month and the adult fly emerges out during May-August. It has rudimentary mouth parts and lives upto 7-10 days only. Perforations caused in the skin of infested animals by its larvae is the major economic loss inflicted by this pest. Lowered milk production and reduced weight gain are the other ill-effects of this menace (Soulsby, 1982). This paper presents the prevalence of goat warbles and efficacy of ivermectin against them in two endemic areas of Taunsa and Barkhan.

MATERIALS AND METHODS

The study was conducted during 2nd and 3rd week of November, 1993. Twenty-seven flocks (n=445) of mixed goat breeds (Jattal, Teddy and Beetal) from five villages at Taunsa and nine flocks (n=405) from four villages at Barkhan. Each animal was palpated with hands and the number of warbles (nodules) on each infested animals were counted. Based upon the number of warbles per infested animal the degree of infestation

was recorded on a scale from +1 to +4. Infested animals were given ivermectin (MSD, Netherlands) S/C at the dose rate of 1 mL/50 kg.b.wt. The treated animals were examined after a fortnight for degeneration of nodules or otherwise and for the side effects of ivermectin. The data were analyzed by chi-square test.

RESULTS AND DISCUSSION

The village-wise prevalence of warbles in goats at Taunsa and Barkhan is presented in Table 1 and 2, respectively. The proportion of infested goats across different villages both at Taunsa and Barkhan differed significantly. The maximum number of warbles on a goat were 13, 2, 31 and 11 at village Hamalwali Sharqi, KOt Qaisarani, Thatta Leghari, Birot and Mandvani, respectively in Taunsa area. Majority of the animals at these villages had +1 degree of infestation (1-10 number of warbles/animal). At Barkhan area, the maximum number of warbles on a goat were 16, 56, 51, 65 and 27 in village Hajikot Khakra, Balochani, Dubla and Kandhar, respectively. Although majority of infested goats had +1 degree of infestation, a good number of goats had +3 and +4 degree of infestation (Table 2) too. Statistically high significant difference amongst proportion of infested goats across the different villages might be due to the reason that flocks of some villages at both the sites were being maintained in the interior of hills, hence more prone to warble fly infestation.

The efficacy of ivermectin for treating warbles was found to be 100 per cent. All the warbles (nodules) degenerated following ivermectin injection and no perforations in the skin were noted in any of the treated

Table 1: Prevalence of goat warbles at Taunsa

Village	No. of goats			Degree of Infestation*			
	Examined	Infested No.	%	+1	+2	+3	+4
Mandvani	200	83	41.5	(Data not available)			
Kot Qaisarani	46	3	6.5	100.0	-	-	-
Birod	80	30	37.5	(Data not available)			
Thatta Leghari	18	5	27.7	100.0	-	-	-
Hamalwali	111	40	36.0	92.9	7.1	-	-
Sharqi							
Total	455	161	35.4	94.0	6.0	-	-

The proportion of infested goats across the different villages differs significantly ($P < 0.0004$) $\chi^2 = 26.6$

* Values are in percentages.

Legend:

+1	1-10	number of warbles/animals
+2	11-20	number of warbles/animals
+3	21-30	number of warbles/animals
+4	>30	number of warbles/animals

Table 2: Prevalence of goat warbles at Barkhan

Village	No. of goats			Degree of Infestation*			
	Examined	Infested No.	(%)	+1	+2	+3	+4
Hajikit	20	10	50.0	90	10	-	-
Khakra	127	113	88.9	47.9	30.2	3.5	18.5
Balochani	160	152	95.0	51.3	22.4	21.1	5.2
Dubla	99	76	76.67	59.3	17.1	14.5	19.2
Kandhar	25	12	48.0	75.0	16.7	8.3	-
Total	431	363	84.2	53.72	23.2	13.2	31.9

The proportion of infested goats across the different villages differs significantly ($P < 0.0004$) $\chi^2 = 62.6$

* Values are in percentages. Legends are same as that of Table 1.

goat thereafter. A 1-2 minutes bleating at the time of injection was observed in treated goats. No other side effect of ivermectin was recorded in the present study. Results of the study regarding efficacy of ivermectin against goat warbles confirm the findings of earlier studies (Zeybek, 1985; Tassi *et al.*, 1987; Khan *et al.*, 1991; Khan *et al.*, 1994).

Warble fly infestation is an endemic disease of cattle and goats. Its larvae make perforations in the hides and skins of infested animals and thereby lower down their market value. Leather and leather-made goods are major export items of Pakistan and every year a sizeable amount of foreign exchange is earned through the export of these commodities. Perforated skins and hides are not exportable and even in the local

market they fetch a nominal price.

Various development and non-development schemes for the control and eradication of warble fly have been operational in the country for the last twenty years but very little information on their achievements is available in literature. This study was conducted in areas where disease is endemic and non-development projects are on-going for its control for the last many years. The present study indicated a very high prevalence of disease and the impact of previous control programmes is not tangible. More than 80 per cent prevalence at Barkhan is very alarming and warrants launching of immediate control programmes. Ivermectin seems to be drug of choice for treating goat warbles.

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