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## EFFICACY OF IVERMECTIN AGAINST SARCOPTIC MANGE IN CAMEL

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Ivermectin at the dose rate of 0.2 mg/kg body weight and 0.4 mg/kg body weight as subcutaneous injection repeated 3 times at 15 days interval proved to be 100% effective against light, medium and heavy infestation of sarcoptic mange in camels. No side effects were observed with this drug. The untreated control animals remained positive for mange throughout the course of treatment.

**Key words:** Ivermectin (Ivomec), Mange, Camel.

### Introduction

Mange in camel is a very common dermatological problem and is mostly caused by *Sarcoptes scabiei* var. *Cameli*. Over 1.0 million camels exist in Pakistan [1] and are used as a mean of milk, meat and transport. Mange in camel is most prevalent in cold, wet weather and spreads slowly during summer months [2]. The affected animals are observed to continuously rub and scratch their body, stop feeding and become emaciated and then become unfit for work for a long period. Some animals become susceptible to many other bacterial infections even mortality is not uncommon if untreated. Moreover, human scabies resulting from contact with camel is of the utmost importance [3,4]. Keeping in view the importance of this malady, the affected camels were treated with Ivermectin (Ivomec).

Ivomec injection (1% w/v solution of Ivermectin), a new antiparasitic drug used effectively for the treatment of external and internal parasites of cattle, buffaloes, sheep and goats [5], was tried in camel affected with sarcoptic mange.

### Materials and Methods

A total of 35 camels from 6-10 years of age naturally infested with sarcoptic mange were used in this study, of which 5 animals were kept as untreated control. All these animals were kept under similar feeding and managemental conditions through the course of study.

**Acaricide used.** Ivermectin (Ivomec), a product of MSD AGVet, division of Merck Sharp and Dohme, Holland is a derivative of the avermectins macrolytic lactones produced from *Streptomyces avermectin* [6]. Ivermectin is given subcutaneously at the two dose levels i.e., 0.2 mg/kg b.w. and 0.4 mg/kg b.w. and repeated 3 times at 2 weeks intervals.

**Assessment criteria.** All the treated and control animals were constantly observed for mange lesions. Their skin scrapings were collected at 0, 15th, 30th, 45th and 60th day

post treatment from square centimeter areas at 5 places of the skin. The scrapings were kept in 10% postassium hydroxide (KOH) for 24 hr. and the number of mites per square centimeter was counted using Stereomicroscopy [7]. The number of mites counted was expressed per square centimeter of the skin. The intensity of infestation was assigned into light, medium and heavy (240-260, 340-360 & 510-540 live mites per gram scraping respectively). The efficacy of Ivermectin when injected subcutaneously in doses of 0.2 mg/kg b.w. and 0.4 mg/kg b.w. against sarcoptic mange mites in light, medium and heavy infestations lied on 5 animals showed these degree of infestation.

### Results and Discussion

The efficacy of Ivermectin on sarcoptic mange is recorded in the Table 1.

Ivermectin at the rate of 0.2 mg/kg body weight showing light, medium lesions of sarcoptic mange reduced live mite counts till they became zero in skin scrapings after 60 days of treatment. Ivermectin @ 0.4 mg/kg body weight reduced mite counts to zero in skin scrapings of such animals on the day 45 of administration whereas camels showing heavy lesions of sarcoptic mange and treated with the respective doses of Ivermectin showed zero counts of live mites in scrapings after 60 days of treatment. The results of the present study were in line with those of some workers [8-10]. They reported that 3 injections of Ivermectin at an interval of 15 days at the dosage rate of 0.2 mg/kg body weight is 100 per cent effective in camel. Similar results have also been recorded by other workers [11].

After 10 days injection of Ivermectin, biting, itching and uneasiness were completely subsided. Alopecia and keratinization were gradually reduced. scrapped wounds healed gradually. Animals in control group remained positive for sarcoptic mange throughout the course of treatment.

TABLE 1. EFFICACY OF IVERMECTIN AGAINST SARCOPTIC MITES.

Intensity of infestation	Dose in mg/kg body weight	No. of animals in each group	Average no. of live <i>S. scabiei</i> var. <i>cameli</i> per gram of scraping				
			0 Day	15th Day	30th Day	45th Day	60th Day
Light	0.2	5	240	190 (20.8%)	110 (54.2%)	50 (79.2%)	0 (100%)
	0.4	5	260	130 (50.0%)	60 (76.9%)	0 (100%)	0 (100%)
Medium	0.2	5	340	240 (29.1%)	190 (44.1%)	80 (76.5%)	0 (100%)
	0.4	5	360	245 (31.9%)	90 (75.0%)	0 (100%)	0 (100%)
Heavy	0.2	5	510	450 (11.8%)	260 (49.0%)	60 (88.2%)	0 (100%)
	0.4	5	540	420 (22.2%)	230 (57.4%)	40 (92.6%)	0 (100%)
Control	-	5	245	215	250	250	250

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