

THERAPEUTIC TRIALS ON PSOROPTIC MANGE WITH IVERMECTIN, EKTODEX, DIMILIN AND KARANJI OIL*

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In our country, rabbits are reared for laboratory purpose, meat, pelt, wool and also as a pet animal. Many organisms can affect the health of rabbits among which *Psoroptes cuniculi* is an acarine ectoparasite infesting the ear canal of rabbits. Different acaricidal agents are used for the control of these parasites.

Ivermectin at the dose rates of 0.2 mg/kg (Prosl and Kanount, 1985; Wright and Riner, 1985), 0.4 mg/kg (Wright and Riner, 1985; Pandey, 1989; Renukaprasad *et al.*, 1989, Draz, 1993; Tripathi *et al.*, 1993) and 0.3 mg/kg (Saudan *et al.*, 1991 and Tripathi *et al.*, 1993) were tried against psoroptic mange in rabbits. Maske *et al.* (1991) and Kamboj *et al.* (1995) got 100 per cent results against Psoroptic mange. Il Yaschenko (1981) observed 100 percent acaricidal effect using Diflubenzuron while contradictory results were observed by Downing *et al.* (1990). Chhabra and Saxena (1998) gave detailed account on the acaricidal effects of Karanji oil.

Materials and Methods

Thirty two positive cases of Psoroptic mange in rabbits were divided into four groups of 8 each.

Group I was treated with Ivermectin at a dose rate of 0.3 mg/kg subcutaneously as a single dose, Group II with Ectodex (obtained from Pet Care, Tetragon Chemie Ltd., Bangalore containing Amitraz 5% w/v) 0.6 per cent as single application externally, group III with DIMILIN (obtained from Coromandel Indag Products India Pvt. Ltd., Madras containing Diflubenzuron 25% WP) 0.025 per cent as single application externally and Group IV with Karanji oil as single application externally.

The efficacy of the acaricides were evaluated based on reduction in the number of mites in skin scrapings on 7th, 14th and 21st days after treatment. The severity of lesion, presence or absence of live mites and eggs in scrapings were also noted on the above mentioned days.

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Results and Discussion

Single treatment of Ivermectin at the dose rate of 0.3 mg/kg body weight produced 100 per cent efficacy by 21st day (Table 1). The severity of lesions were reduced and live mites were absent on 14th day. But, eggs were present upto 14th day in 37.5 per cent of cases, which became absent on 21st day. Prosl and Kanout (1985) and Wright and Ringer (1985) stated that a dose of 0.2 mg/kg body weight was inadequate to clear Psoroptic mange. The total efficacy of Ivermectin at the dose rate of 0.4 mg/kg body weight was observed by many workers (Wright and Riner, 1985; Pandey, 1989; Renukprasad *et al.*, 1989; Draz, 1993, Tripathi *et al.*, 1993). But, the present study fully concur with the observations of Saudan

et al. (1991) and Tripathi *et al.* (1993) who observed 100 per cent efficacy of Ivermectin at 0.3 mg/kg body weight against Psoroptic mange.

Single topical application of Ektodex (amitraz 5% w/v) 0.6 per cent produced 34.5 per cent efficacy only. Eventhough severity of lesion reduced and live mites were absent from 7th day in 62.5 per cent of cases eggs were present on the 21st day also in 62.5 per cent of cases. This observation is contrary to that of Maske *et al.* (1991) and Kamboj *et al.* (1995) who got 100 per cent efficacy against *P. cuniculi*.

Single topical application of Dimilin (Diflubenzuron 25% WP) 0.225 per cent increased mite number upto 19.6 per cent after treatment. Live

Table . Result of treatment of Psoroptic mange with different acaricides

Acaricide	Mite number per 100 mg skin material (Mean values)				Severity of lesion	Live mites	Eggs present upto	Efficacy percentage		
	Zero day	7 th day	14 th day	21 st day				7 th day	14 th day	21 st day
Ivermectin 0.3 mg/kg	2308.25± 1009.91	600.00 ± 183.73	42.50 ± 13.33	0	Reduced	Absent from 14 th day	14 th day in 37.5% of cases	74.01	98.15	100.0
Ektodex 0.6% (Amitraz 5% w/v)	725.00± 16.44	376.25± 162.07	481.25± 225.98	475.00± 203.50	Reduced	Absent from 7 th day in 62.5% of cases	21 st day in 62.5% of cases	48.1	33.6	34.50
Dimilin 0.025% (Diflubenzuron 25% wp)	1679.25± 174.99	1711.50± 135.50	1865.75± 345.47	2008.75± 426.81	Increased	Present upto 21 st day	21 st day	-1.92	-11.11	-19.6
Karanji oil	2197.57± 87.52	330.15± 72.81	7.50± 1.12	0	Reduced	Absent from 7 th day	7 th day in 50% of cases	84.98	99.6	100.0

mites and eggs were present on 21st day and severity of lesion only increased. The present study is in agreement with the observations of Downing *et al.* (1990) but contrary to that of Il Yashchenko (1981).

Single topical application of Karanji oil produced 100 per cent efficacy against Psoroptic mange in rabbits. The eggs were present only upto 7th day in 50 per cent of cases which became absent by 21st day. Live mites were absent from 7th day onwards. Prajapathi and Hiregoudar (1976) and Sangwan *et al.* (1994) also got comparable results.

Summary

The percentage efficacies of Ivermectin, Ektodex, Dimilin and Karanji oil on 21st day after treatment were 100, 34.5, 19.6 and 100 per cent respectively for Psoroptic mange. Karanji oil and Ivermectin showed comparable good results. Dimilin (Diflubenzuron) increased the severity of lesion and mite number. Ektodex was not 100 per cent effective on single application.

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