ABSTRACT
Canine scabies is an extremely pruritic and contagious skin condition caused by epidermal mite, Sarcoptes scabiei var canis. In the present study a total N=200 dogs of various breeds and of both sexes were examined for the presence of Sarcoptes scabiei var canis. Of these N=34 (12%) were found positive, and from these dogs, 12 were selected for therapeutic trials. These were randomly divided into groups; A, B and C having four dogs in each group. These dogs were treated with Nicotiana tobaccum & Azadirachta indica. Efficacy of the drug was calculated on the basis of disappearance of signs, negative skin scraping and subsidence of the skin surface. The results revealed that the efficacy of Nicotiana tobaccum was 75%, whereas, the Azadirachta indica showed 50% efficacy.

KEYWORDS: Canine scabies, epidermal mite, chemotherapy, herbal medicine, NWFP

INTRODUCTION
Canine scabies is an extremely pruritic and contagious skin condition caused by epidermal mite, Sarcoptes scabies var canis (Prescott, 1970). The disease spreads from dog to dog and also to human by direct contact (Dominguez et al., 1978). People became infected in about 50% of canine cases; however, the dermatosis in people usually dissipates spontaneously 2-4 weeks after the animal is treated (Folz et al., 1984). Clinical signs include intense pruritis, erythema, papular eruptions, accumulation of keratotic tissue and alopecia of the affected areas. Severely affected dogs may have open lesions caused by scratching. Scabies lesions are mostly seen in the muzzle, chest, elbow, around the eyes and in the ears and then spread to back and abdomen.

Dogs are kept as pet by quite a good number of people in Pakistan. Due to unhygienic conditions, dogs get infested with ectoparasites. It is a noticeable disease in most countries including Pakistan where environmental and unhygienic conditions are favourable for its growth and transmission. The disease is important because of its severity. The disease is most prevalent in cold wet weather and spreads slowly during the summer months. The impact of the mange in dogs lies on their general health and growth, but in severe infestation, especially in pups, the disease may terminate fatally (Irfan et al., 2003).

Robles (2005) treated some cases of lice infestation with Tobacco (Nicotiana tobaccum) and Neem (Azadirachta indica) and found them to be very effective. No work has been done on the use of Tobacco (Nicotiana tobaccum) and Neem (Azadirachta indica) against sarcoptic mange in canine. Keeping in view the present study was conducted to record the prevalence of Sarcoptic mange and to see the efficacy of herbal medicines against the disease.
MATERIALS AND METHODS
The study was conducted in the civil veterinary Hospital Karak and veterinary research diagnostic laboratories Kohat. The research was carried out from January 2005 to May 2005. A total of 200 dogs (of various breed, age groups and of both sexes) were brought to the hospital / clinic for treatment against the complaint of different skin diseases. Skin scrapings from 200 suspected cases showing signs of pruritis and alopecia were collected from edges of the lesions in a separate clean Petri dish. These Petri dishes containing samples were warmed at 37°C for approximately 5 minutes and then examined under microscope for the presence of various stages of life cycles of mites (Soulsby, 1982). The skin scrapings found negative, were transferred to the test tube containing 10 ml of 10 % KOH and heated for 5 minutes in a beaker containing water. Later the tubes were centrifuged for 5 minutes at 1500x g and supernatant was discarded. About 5ml of D/water was added to the sediment and tubes were again centrifuged. The supernatant was discarded and a drop of sediment was examined microscopically for the presence of mites and their larval stages (Soulsby, 1982). 34 dogs showed typical lesions of Sarcoptic mange and found positive for mites by microscopic examination, of these 12 dogs were selected for therapeutic trials at the owner residence under close observation.

These 12 dogs were randomly divided into three groups i.e. A, B, and C, each having 4 dogs. Four dogs in group A were treated, sprayed with Nicotiana tobaccum (tobacco) at concentration of 20% solution. Two spray applications were given at an interval of 7 days. On each occasion, cages and surroundings were also sprayed with same concentration of Nicotiana tobaccum for making the surroundings free from mites. Four dogs in group B were treated with Azadirachta Indica (Neem) at concentration of 30% solution. Treatment was given topically at an interval of 7 days. On each occasion, cages and surroundings were sprayed with same concentration of Azadirachta Indica for making the surroundings free from mites. No treatment was given to the group C (dogs) and was kept as control group. All the treated and control dogs were observed daily for mange lesions and their skin scrapings were examined microscopically on 7th, 15th and 21st day post treatment for the presence or absence of mites. Negative skin scrapings and subsidence of skin surface were taken as criteria to evaluate the efficacy of drugs.

RESULT AND DISCUSSIONS
Canine Scabies (Sarcoptic mange) is a parasitism resulting from an infestation with a parasitic mite, Sarcoptes scabiei var canis. The entire life cycle of the mite occurs on the host, and requires 17-21 days (Soulsby, 1982). Transmission is by direct contact and the disease is highly contagious, intensely pruritis and characterized by crust formation. Scabies lesions are mostly seen in the muzzle, chest, elbow, around eyes and in the ears and then spread to back and abdomen. Most cases of zoonotic scabies originate from dogs. Dogs are kept as pet by quite a good number of people in Hangu, Kohat and Karak District of NWFP (Pakistan). Due to unhygienic conditions, dogs get infested with ecto parasites. It is a notable disease in most areas of Pakistan including NWFP where environmental and hygienic conditions are favourable for its growth and transmission. It is important because of its severity. The impact of the mange in dogs lies on their general health and growth, but in severe infestation, the disease may terminate fatally. Diagnosis may be different because frequently the mite is not observed in skin scrapings; this condition is referred to as scabies incognito (Scott, 1982). The occurrence of resistant strains of mites and treatment toxicity to the host, results in scabies being a challenging disease to diagnosis and treatment (Anderson, 1982). The objective of the study was to record the prevalence of sarcoptic mites in Canine and evaluate the efficacy and safety of the Herbal medicine as a treatment for naturally acquired canine scabies. In the present study, a total of 200 dogs of various breed age groups and of both sexes were brought to the Veterinary Hospital Karak, Animal Health Clinic Metha Khel (Karak) and veterinary Research diagnostic laboratories Kohat. Of these, 34 were found positive for Sarcoptic scabies. The prevalence was thus 12 %. Various workers from all over the world recorded the prevalence of sarcoptic mange in dogs (Folz et al (1984) from U.S.A, Maqbool et al (1992) from Pakistan, Morris et al (1996), from U.S.A, Normaznah et al (1996) from Malaysia, Curtis et al (2001) from Itly, Lower et al (2001), Morsy et al (2001) from Egypt, Takahashi et al (2001) from Japan, Irfan et al (2003) from Pakistan.


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The prevalence of Sarcoptic mange in relation to age indicated that dogs under one year of age were significantly more frequently affected (17.14%) than over one year (8.46%). These findings are in line with those of Prescott, (1970), Folz et al (1984), Maqbool et al, (1992), and Irfan et al (2003). Since the disease spread by contact, the higher prevalence in dogs under one year of age could be due to their tender skin, huddling tendency and close contact. The prevalence of Sarcoptics mange in relation to sex indicated that this variable did not affect the prevalence as well as severity of infestation since the dogs of either sex were nearly equally affected. Folz et al (1984), Maqbool et al (1992) and Irfan et al (2003) also recorded similar observations. It was noted that highest prevalence was reported in German Shepherds (17.77%) followed by Russian (13.33%), Doberman (6.66%), and where as the lowest prevalence was noted in Labrador (5.00%).

The miticidal activity of indigenous drugs including Nicotiana tobaccum (Tobacco) Azadirachta indica (Neem) were evaluated, their efficacies were compared with each other and with control (untreated). Four dogs in group A were treated with Nocotiana tobaccum (Tobacco). The data reported herein indicate that two topical treatments with miticide (Nicotiana tobaccum) liquid concentration was safe and effective for treating naturally acquired canine scabies. Seventy five per cent of dogs (3 of 4) were returned to clinical normality, with three Tobacco treatments, 75% of the treated dogs did not harbour any viable mites; therefore the therapy was lethal for all stages of the parasite. No work has been done on the use of Tobacco against sarcoptic mange, but it was used against lice infestation by Robles (2005) was reported as 79.67 per cent. Exposure of the eyes to the Tobacco during treatment was observed in few cases but eye irritation was not noted. Dogs treated with Tobacco gained weight. The therapy did not cause any dermal, ocular or other clinical side effects.

Four dogs in group B were treated with Azadirachta Indica (Neem). Two topical treatments with the liquid concentrate were safe, but only partially efficacious as a therapy for naturally acquired scabies. Dogs treated with Azadirachta Indica had significant clinical improvement; however, the incidence of mites was not reduced. Dogs in this group were intermittently positive for viable mites during the entire treatment interval, of these four dogs, 2 (50%) were cleared of viable mites and no adverse side effects associated with therapy. No work has been done on the use of Neem against mite infestation but Robles (2005) reported it high efficacy against lice infestation. The dogs in control group C did not clinically improve, and these had a weight loss, which was significantly different from the treated group.

Efficacy of Nicotiana tobaccum and Azadirachta indica against Sarcoptes scabiei in dogs on different days

<table>
<thead>
<tr>
<th>Name of Medicine.</th>
<th>Concentration of solution.</th>
<th>No of dogs under trials</th>
<th>No. of dogs recovered on different days and efficacy in percentage.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>7th day</td>
</tr>
<tr>
<td>Nicotiana tobaccum</td>
<td>20% solution topical spray</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Azadirachta indica</td>
<td>40% solution Topical spray</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>
Age, Sex and Breed wise Prevalence of Sarcoptic mange in Dogs

<table>
<thead>
<tr>
<th>Over all Prevalence</th>
<th>Factors</th>
<th>Number Examination</th>
<th>Number Positive</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Below one year</td>
<td>70</td>
<td>12</td>
<td>17.14</td>
</tr>
<tr>
<td></td>
<td>Above one year</td>
<td>130</td>
<td>11</td>
<td>8.46</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>145</td>
<td>17</td>
<td>11.72</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>55</td>
<td>6</td>
<td>10.90</td>
</tr>
<tr>
<td>Breed</td>
<td>Russian</td>
<td>30</td>
<td>4</td>
<td>13.33</td>
</tr>
<tr>
<td></td>
<td>Labrador</td>
<td>40</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Doberman</td>
<td>60</td>
<td>4</td>
<td>6.66</td>
</tr>
<tr>
<td></td>
<td>German  shepered</td>
<td>45</td>
<td>8</td>
<td>17.77</td>
</tr>
</tbody>
</table>

REFERENCES


Robles, A.P., (2005). Comparative Efficacy of Tobacco (Nicotiana tabacum), Makabuhay (Tinosporohora rumphi), Tubli (Derris philippinensis) and Neem (Azadirachta indica) against Carabao Louse (Haematopinus tuberculatus). C.V.M. University of Philippines, Los Banos.


