of neat semen, it is concluded that the quality of Murrah buffalo bull and Holstein Friesian cattle bull semen was very good. Morphological features of sperm serve as a reliable indicator in predicting the fertilizing capacity of sperm and also reflect certain disorders of spermatogenesis.

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References


Gastrointestinal Parasitism in Stray Dogs at Srinagar City of Kashmir Valley

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Abstract
The current study on Gastrointestinal (GI) Parasitism in stray dogs was carried out for a period of one year in Srinagar city of Kashmir Valley. A total of 150 copro samples were examined by standard sedimentation and flotation techniques.

Key words: GI Parasites, Stray Dogs, Srinagar.
stray dogs at Srinagar city of Kashmir Valley, so that a package of practices for their control may be developed to prevent public health hazards. Additionally controlling canine parasites will prevent economic losses in domestic animals which act as intermediate hosts to various such parasitic species.

**Materials and Methods**

150 faecal samples were collected from the stray dogs at Srinagar city of Kashmir Valley. Sampling was done by observing the animal till it defecated and the top layer of the faeces was collected in sterile polythene bags and preserved at 4°C when immediate examination of the samples were not possible. Samples were processed in the Helminthology laboratory of the Division of Veterinary Parasitology, F.V.Sc. & AH., SKUAST-K. Briefly explaining the protocol, the copro samples were first examined grossly for color, consistency, presence of blood, mucus and dead worms. Then they were examined by standard sedimentation and floatation techniques as per Solusby (1982).

**Results and Discussion**

Out of 150 copro samples examined 89 were found positive for one or the other parasites. Thus overall prevalence was found to be 59.33% (Table I). This value is in agreement with the prevalence reported previously by workers from various parts of the world including India. Agnihotri et al. (2008) reported 52.90% prevalence of GI helminth infection in dogs of Himachal Pradesh. Harkirat et al., (2012) and Sawleha et al. (2012) reported lower prevalence (24.71% and 23.7%) of GI parasitic infections in dogs in and around Ludhiana, Punjab and Jabal-

<table>
<thead>
<tr>
<th>Samples Examined</th>
<th>Samples Positive</th>
<th>Toxocara spp.</th>
<th>Toxascaris spp.</th>
<th>Ancylostoma spp.</th>
<th>Isospora spp.</th>
<th>Mixed infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>89 (59.33%)</td>
<td>51 (34%)</td>
<td>23 (15.33%)</td>
<td>56 (37.33%)</td>
<td>13 (8.66%)</td>
<td>37 (24.66%)</td>
</tr>
</tbody>
</table>

![Fig. 1: Eggs/Ova of GI parasites of canines](a) Ancylostoma (b) Toxocara (c) Toxascaris (d) Isospora.)
pur, Madhya Pradesh, respectively. Pandit et al. (loc. cit) has however reported higher prevalence (88.50%) of GI parasites in stray dogs of Kashmir Valley. Das et al., (2009) and Moudgil et al., (2014) have reported comparatively higher and lower prevalence of 65.64 and 47.29 per cent of GI parasites among stray dogs of Puducherry and Palampur, respectively.

In the present study, out of 150 samples, 51, 23, 56 and 13 were found positive for Toxocara spp. (34.00%), Toxascaris spp. (15.33%), Ancylostoma spp. (37.33%) and Isospora spp. (8.66%), respectively (Fig 1). Moudgil et al. (loc. cit) reported higher prevalence of Toxocara canis (44.93 %) infection and lower prevalence of hookworms (15.94 %) among stray dogs of Palampur, Himachal Pradesh. Harkirat et al. (loc. cit) reported comparatively lower prevalence of Isospora spp. (2.29%) and Ancylostoma spp. (22.41%) in Ludhiana, Punjab. Sahu et al., (2012) found almost similar prevalence (31.29%) of T. canis in stray dogs in Bareilly, UP. Das et al. (loc. cit) reported higher prevalence of Ancylostoma spp. (51.53%), lower prevalence of Toxocara spp. (16.56%) and Isospora spp. (2.45%) in stray dogs of Puducherry. Traub et al. (2014) reported dominance of hookworms in stray and refugee dogs in Skim (71.3%), Mumbai (48.8%) and Delhi (39.1%). Dar et al. (loc. cit) reported an overall prevalence of T. canis infection in six districts of Kashmir Valley as 19.42% with lowest in Srinagar (12.12%). Pandit et al. (loc. cit) have also reported higher prevalence of Toxocara canis (60.85%), Toxascaris leonina (47.86%) and Isospora spp. (12.81%) from Kashmir Valley.

37 faecal samples were found positive for mixed infections among 150 samples examined in the present study i.e. 24.66% samples were positive for mixed infections. In the present study single parasitic infections were more common than mixed infections and the same trend has been reported by Sawleha et al. (loc. cit) from Jabalpur, Madhya Pradesh. Mixed infections in dogs are possible because of multiple sources of contracting infections by the dogs. Dogs may contract infections because of poor nutrition and poor sanitary conditions. Mixed infections of two to six different parasites confirm the importance of dogs as reservoirs of zoonotic GI parasites and thus pose a great risk to pet owners with respect to zoonotic diseases.

**Summary**

This preliminary study revealed 59.33% prevalence of GI parasites among stray dogs of Srinagar city. The different parasites observed were Toxocara (34.00%), Toxascaris (15.33%), Ancylostoma (37.33%) and Isospora (8.66%). Mixed infection was observed in 24.66% of canines. It is concluded that a consistent control programme for control of these GI parasites in dogs may be devised and also proper sanitary conditions should be maintained to minimize zoonotic disease transmission.

**References**


