RESEARCH ARTICLE
THEILERIOSIS IN CATTLE: PREVALENCE AND SEASONAL INCIDENCE IN JALANDHAR DISTRICT OF PUNJAB (INDIA)
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ABSTRACT
Theileriosis is a major threat to dairy industry that causes a fatal disease in cattle. The aim of the present study was to assess the prevalence of theileriosis in cattle, 620 blood samples were screened by using Giemsa’s staining technique. Microscopic examination of blood smears revealed 9.35% (58) overall prevalence of theileriosis. The highest prevalence was found in summer season with a prevalence rate 13.3% which indicates that theileriosis spread more in hot and humid weather (summer season), immediate screening norms/policies are needed to reduce the extent of spread. There is a need for further investigation using molecular technique.

Key words: Blood smear, seasonal prevalence, Theileria, Punjab.

INTRODUCTION
Haemoprotozoan diseases are major constraints to the dairy industry and causes devastating losses to the livestock. Most of these diseases are initiated by ticks. The hot and humid climate is highly favourable for the development and survival of ticks. In particular, ticks spread Theileria which pose a serious challenge to the cattle population. Theileria annulata and Theileria parva are considered to be the most pathogenic species of Theileria. Tropical theileriosis is one of the most prevalent diseases of cattle caused by T. annulata (Mirzaei 2007) and is transmitted through Ixodid tick of genus Hyalomma. Theileriosis has serious economic impact in view of mortality and reduced milk yield.

Most of the haemoprotozoan parasites are tick borne and are of great economic importance in Asia and have always been formidable barriers to the survival of cattle in India. In India the annual loss reported due to tropical theileriosis is approximately US$ 800 million (Devendra 1995).

In India theileriosis has been reported from geographical regions such as Punjab, Haryana and Gujrat. In Northern Kerala and Gujrat (16% and 37%) positive cases of theileriosis has been reported in cattle, respectively. The present study was aimed to assess the season wise prevalence of Theileria in Jalandhar district of Punjab, India.

MATERIALS AND METHODS
A total of 620 cattle blood samples were received in vacutainers test tube having EDTA from field to Regional Diseases Diagnostic Laboratory (Parasitology laboratory), Jalandhar (March to December 2013) with a clinical history of high fever (104°F-106°F).

Thin blood smears were prepared immediately after receiving the blood samples as described by Afridi et al. (2005). The stained slides were examined under oil immersion at 100x magnification. Thereafter, the blood parasites were identified as described by various OIE publications (OIE, 2004, 2008a, b).

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Spring (March, April), Summer (May, June, July), Rainy (August, September, October) and Winter (November, December)

Table 1 Seasonal Incidence and Prevalence of Theileria in cattle

<table>
<thead>
<tr>
<th>Season</th>
<th>Month</th>
<th>Total no of Samples received</th>
<th>Theileria Positive</th>
<th>% of Positive cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>March</td>
<td>33</td>
<td>1</td>
<td>4.39</td>
</tr>
<tr>
<td></td>
<td>April</td>
<td>58</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>May</td>
<td>69</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>June</td>
<td>26</td>
<td>5</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>92</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aug.</td>
<td>126</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Rainy</td>
<td>Sep.</td>
<td>107</td>
<td>9</td>
<td>9.85</td>
</tr>
<tr>
<td></td>
<td>Oct.</td>
<td>41</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nov.</td>
<td>30</td>
<td>1</td>
<td>2.94</td>
</tr>
<tr>
<td>Winter</td>
<td>Dec.</td>
<td>38</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>620</td>
<td>58 (9.35%)</td>
<td></td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION

The present study suggests that Jalandhar region is endemic for theileriosis and occurrence of the disease was high during summer. The outcome of the present study would help to forecast disease outbreak not only in this region but also in other parts of country. There is a need for further investigations using molecular techniques for the accurate identification of the carrier status of haemoproteozoan parasites.

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References


