Prevalence of frothy bloat in goats

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Abstract
Present study was undertaken to know the prevalence of frothy bloat in goats in and around Jabalpur. A total of 1340 goats were screened from various organized (485 goats) and unorganized sectors (855 goats) of goatry. The overall prevalence of frothy bloat in goats was found to be 4.02% and among the goats with digestive disorders, it was 16.92%. The age wise prevalence of frothy bloat was highest in the goats of 1 to 2 years of age followed by goats above 2 years of age and least among the goats less than 1 year of age. Breed wise prevalence was more in non-descript goats i.e. 23.47% followed by Barabri (14.28%), Jamnapari (13.15%) and Sirohi (12.19%). Gender wise prevalence was more in female (18.51%) than male (16.11%). Sector wise prevalence was higher in unorganized (21.80%) than organized sector (9.92%) of goatry.

Keywords: Prevalence, frothy bloat, goat

Introduction
Bloat is an over distension of the rumen-reticulum with the gases of fermentation, either in the form of persistent foam mixed with the ruminal contents, called primary or frothy bloat, or in the form of free gas separated from the rumen content, called secondary or free gas bloat. It is predominantly a disorder of cattle but may be seen in sheep and goats and is most common non-infectious disease in goats. Frothy bloat is more dangerous than dry bloat. In bloat condition most common sign is a distended abdomen, mostly on the left side. The distended area becomes taut and sounds like a drum if tapped. The animal may show signs of pain such as grinding of teeth, depression, getting up and down, extending its neck, frequent urination etc. In advanced case, the animal may have difficulty in breathing, excessive panting and staggering about if moved (Yami and Zewdie, 2009) [8]. Bloat is most common at the beginning of the rainy season, peaks in the spring and autumn. When animals are exposed to fast growing lush pasture after being on a diet of dry feed have more probability of bloat (Constable et al., 2017) [1]. The stomach of ruminant produces gas as a natural byproduct of digestive fermentation. The animals continually belch, about once every minute, to get rid of the gas. Whenever anything interferes with this release of gas or if fermentation is too rapid, gas becomes trapped in the rumen causing a condition known as bloat. Production of gas (Primarily carbon dioxide and methane) is normal result of fermentation processes. The rumen expands with foam and the animal can die quickly from respiratory or circulatory failure due to excessive pressure on the diaphragm. Several animals are usually affected with this type of bloat. Bloat can be a life-threatening condition if left untreated. Thus the present study was aimed to know the prevalence of frothy bloat in goats in and around Jabalpur (M.P.), India.

Material and Methods
A total of 1340 goats were screened from various organized and unorganized sectors of goatry, diagnosed on the basis of history of abdominal distension, physical and laboratory examination of rumen fluid.

Statistical analysis
Chi square test was used to study the prevalence (SPSS statistics version. 21.0).

Results
Overall prevalence of frothy bloat in goat
The overall prevalence of frothy bloat in goats was 4.02 per cent (54/1340) and among digestive disorders the prevalence was 16.92 per cent (54/319). Significant difference (p<0.05) in prevalence of frothy bloat in goats with digestive disorders was found in the present study.
The results of the study correlate well with the findings of Samad (2001) who reported 3.98% prevalence of bloat in goats. However, Rehman et al. (2012) reported overall 22.9% prevalence of digestive disorders in goats. Karim et al. (2014), Khan et al. (2017) and Sen et al. (2018) recorded comparatively less prevalence of bloat (i.e. 2.2 to 2.9%). The present findings indicate the presence of bloat in goats in and around Jabalpur. Such type of variations in prevalence might be attributed to agro-climatic conditions, feeding habit and managerial practices.

**Age wise prevalence of frothy bloat in goats**

To know the age wise prevalence of frothy bloat in goats, wide range of age groups were taken and categorized into three categories. The highest prevalence of frothy bloat was recorded in goats between 1 to 2 years of age i.e. 19.56 per cent (27 out of 138) followed by goats more than 2 years of age i.e. 15.25 per cent (18 out of 118) and least among goats below 1 year of age i.e.14.28 per cent (9 out of 63). No significant difference in age wise prevalence of bloat in goats was found in the present study.

**Table 1: Overall prevalence of frothy bloat in goats**

<table>
<thead>
<tr>
<th>Goat</th>
<th>No. examined</th>
<th>No. affected</th>
<th>Prevalence (%)</th>
<th>$\chi^2$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total screened</td>
<td>1340</td>
<td>54</td>
<td>4.02</td>
<td>57.6546</td>
</tr>
<tr>
<td>With digestive disorders</td>
<td>319</td>
<td>54</td>
<td>16.92</td>
<td></td>
</tr>
</tbody>
</table>

Significant at $p<0.05$

Similar results were reported by Tagesu (2018) where prevalence of bloat was higher in adult bovine (81.9%) than young (66.7%). No significant difference was recorded in age wise prevalence of frothy bloat in goats. This might be attributed to the fact that there is no predilection of age group for bloat in goats however the variation in prevalence may be due to physiological activity in different age group.

**Breed wise prevalence of frothy bloat in goats**

In and around Jabalpur region breeds like Jamunapari, Sirohi, Barbari and non-descript breeds are found. The highest prevalence was recorded in non-descript goats (23.47%) followed by Barbari (14.28%), Jamunapari (13.15%) and Sirohi (12.19%). No significant difference in breed wise prevalence was recorded. Results are depicted in table 03.

**Table 2: Age wise prevalence of frothy bloat in goats**

<table>
<thead>
<tr>
<th>Age group</th>
<th>No. examined</th>
<th>No. affected</th>
<th>Prevalence (%)</th>
<th>$\chi^2$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>63</td>
<td>9</td>
<td>14.28</td>
<td>0.871</td>
</tr>
<tr>
<td>1-2 year</td>
<td>138</td>
<td>27</td>
<td>19.56</td>
<td></td>
</tr>
<tr>
<td>&gt; 2 year</td>
<td>118</td>
<td>18</td>
<td>15.25</td>
<td></td>
</tr>
</tbody>
</table>

Gender wise prevalence of frothy bloat in goats

Gender wise prevalence of frothy bloat was marginally higher in female. No significant difference in prevalence of bloat in goats was found in the present study. However, among 211 male goats, 34 (16.11%) and among 108 female goats, 20 (18.51%) were positive for bloat. The results are outlined in table 04.

**Table 5: Sector wise prevalence of frothy bloat in goats**

<table>
<thead>
<tr>
<th>Sector</th>
<th>No. examined</th>
<th>No. Affected</th>
<th>Prevalence (%)</th>
<th>$\chi^2$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organized</td>
<td>131</td>
<td>13</td>
<td>9.92</td>
<td>5.6256</td>
</tr>
<tr>
<td>Unorganized</td>
<td>188</td>
<td>41</td>
<td>21.80</td>
<td></td>
</tr>
</tbody>
</table>

Significant *$p<0.05$

Our investigation was confined to small and marginal goat farmers in the area of Jabalpur. Adequate managerial practices contribute to less prevalence of bloat in organized sector as compared to unorganized sector.

**References**


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