Physical characteristics, productive and reproductive performance of non-descript cattle in Ratnagiri District of Konkan Region, India.

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Abstract

The present study consisted of the data of total 360 non-descript cattle collected from different tahasils of Ratnagiri district. Coat colours of the cattle have been found namely brown, black, grey and mixed. Almost all animals were found to having black muzzle, black eyelid. The animals have small in size, udder with different shape like bowl, round, trough and pendulous. Reproductive performance of the animals studied was measured as average age at first calving was 47.78±0.82 months, average calving interval and number of calving were found as 381.23±3.27 days and 2.94, respectively. The animals in the study had an average lactation milk yield, daily milk yield, lactation length and dry period in non-descript was found as 270±4.13 kg, 1.62±0.03 kg 200.50±5.26 days and 173.05±3.34 days, respectively.

Keywords: Non-descript cattle, productive performance, reproductive performance.

Introduction

A non-descript cattle constitute 86 percent of total cattle population in India. The average milk production of non-descript cattle cow is about 1.50 kg/day. Although milk production of non-descript cattle is low, it shows very high adoption to agro climate condition of the respective region (Khirari et al., 2014). Further, it serves as source of variation for selection and improvement for milk production (Yadav and Rathi, 1991). Efforts are being made to improve the production performance of non-descript cattle through cross breeding with dairy exotic cattle, however it has not yielded desirable results as it possess problem in maintaining exotic inheritance level as field condition (Rehaman et al., 1998). In the context of the above mentioned facts, it is important to make a comprehensive study of non-descript cattle their adaptability, physical characters and reproductive characters which can be an aid to future conservation measures.

Materials and Methods

The present investigation consisted of analysis of data collected from five different tahasils of Ratnagiri district from where reports about non-descript cattle have been received. The sites were selected purposively considering the need for availability of data. A total 360 cattle were studied with 70 were from Dapoli, 80 were from Mandangad, 60 were from Chipuln, 70 were from Sangameshwar and 80 were from Lanja. Three stage stratified random sampling was followed for collection of data on morphological characters of cattle from Ratnagiri district. At first stage five tahsils were selected randomly and from each tahsil ten villages were selected randomly in second stage. In the third stage, four farmers having cattle from each selected villages were selected randomly.

For present investigation a set of questionnaire relevant to the objectives the study was designed to collect the information from farmers. After interview with the farmers, the observation with respect to morphological character of cows was recorded. The statistical methods used in the present study include percent analysis, least square mean and standard error.

Results and Discussion

Head length

In the present study, measurements of the animals were taken to get the information about head length. The head length was to be taken as the distance between poll and upper edge of muzzle. The average head length of non-descript cattle was reported 40.48 cm in Ratnagiri district (Table 1). Karthikeyan et al. (2006) reported average head length (44.9 + 0.9 cm) of
Table 1: Different measurements of non-descript cattle

<table>
<thead>
<tr>
<th>Tahsils</th>
<th>Head length(×)</th>
<th>Ear length(×)</th>
<th>Horn length(×)</th>
<th>Circumference of horn at base(×)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dapoli</td>
<td>40.12±0.14</td>
<td>17.32±0.67</td>
<td>19.64±0.67</td>
<td>11.6±0.10</td>
</tr>
<tr>
<td>Mandangad</td>
<td>40.18±0.09</td>
<td>17.98±0.13</td>
<td>19.57±0.63</td>
<td>11.5±0.15</td>
</tr>
<tr>
<td>Chippun</td>
<td>41.90±1.44</td>
<td>18.17±0.12</td>
<td>19.18±0.88</td>
<td>11.4±0.21</td>
</tr>
<tr>
<td>Sangmeshwar</td>
<td>40.10±0.15</td>
<td>17.96±0.11</td>
<td>19.93±0.75</td>
<td>11.6±0.10</td>
</tr>
<tr>
<td>Lanja</td>
<td>40.40±0.18</td>
<td>17.86±0.11</td>
<td>20.14±0.61</td>
<td>11.1±0.09</td>
</tr>
<tr>
<td>Overall mean</td>
<td>40.48±0.18</td>
<td>18.06±0.21</td>
<td>18.06±0.63</td>
<td>11.43±0.11</td>
</tr>
</tbody>
</table>

Krishna valley cattle which were quite higher than present result.

**Ear length**
In the present study, the results of average ear length were reported about 18.06±0.21 cm. Singh et al. (2002) reported the average ear length in cattle breed as 26.18±0.52 cm which was higher than the present study.

**Horn length**
In non-descript cattle, the average horn length observed as 18.06±0.63 cm in the Ratnagiri district. The average horn length of cattle observed in the present study agrees well with that reported by Singh et al. (2002) in Deoni cattle (17.61±0.74 cm). Karthikeyan et al. (2000) reported average horn length (38.50 cm) which was higher than that of non-descript cattle.

**Circumference of horn at base**
The average circumference of horn at base in non-descript cattle was 11.43±0.11 cm in the district. The quite lower value of circumference of horn at base (10.77±0.05 cm) was reported by Dhal et al. (2007) on Khilari breed of cattle.

**Productive performances**

**Lactation milk yield**
In the present study the average lactation milk yield found to be about 270±4.13 kg (Table 2). The higher value of Gaur et al. (2003) reported 462.5±12.1 kg average lactation milk yield in Ponwar cattle which was higher than present study. Singh et al. (2002) recorded average lactation milk yield of Deoni cattle to be 868.24±49.56 kg which way higher than present study.

**Dairy milk yield**
The average daily milk yield of the non-descript cattle under this study was recorded tahasil-wise and it was 1.62±0.03 kg. Findings of the daily milk yield of the present study resembled the lower limit of the study done by Mishra and pal (1999) and Pundir et al. (2007) reported that the average daily milk yield was 3.6±0.1 kg and 2.0±0.5 kg in Binjharpuri and Kankrej breed of cattle which was higher value than the present study.

**Dry period**
In preset study of non-descript cattle of Ratnagiri district the average dry period was recorded as 173.05±3.34 days. The record of the present study was somewhat similar with the findings of Zafer et al. (2008) regarding dry period of cattle reported that in case of the Sahiwal cow breed, the dry period was 172±1.44 days.

**Lactation length**
The average lactation length of non-descript cattle was recorded as 200.50±5.25 days. Dhal (2007) reported the average lactation length of Khilari cattle was 281.20±2.03 which was high value than the present study.

**Reproductive performances**

**Age at first calving**
First calving marks the beginning of a cow’s productive life. Age at first calving is closely related to generation interval and therefore influences response to selection. The average age at first calving in this study was recorded as 47.78±0.82 months. The results of the study partly agreed with the records of Mathur and Khosla (1993) and Pundir et al. (2007). They reported that the average age at first calving as 1365±10.95 days for Gir and 1577.0±5.6 days for Red Sindhi cattle, respectively.

**Calving interval**
The average calving interval of non-descript cattle was reported 381.23±3.27 day (Table 2). Pundir et al. (2007) reported the calving interval in Kankrej breed cattle was 500 days which was higher than the
present study. The characteristic features of the non-descript cows are small in size, horizontal ear orientation, very low milk yield and poor reproductive performance. There is no significant association between body measurements and production performance. There is need to take up breeding programme for development of dual purpose breed suitable for typical agro-climatic conditions of the Konkan region through selection from existing cattle population of the Konkan region.

References