EFFECT OF AGE AT FIRST CALVING ON LACTATION MILK YIELD AND LACTATION LENGTH

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ABSTRACT

Data on 122 calvings from interse progeny of Holstein Friesian X Deoni (HF X D) breed maintained at Cattle Cross Breeding Project, Marathwada Agriculture University, Parbhani (MS) of 12 years period was utilized to study the least square analysis of variance. The effect of age at first calving on lactation milk yield (LMY) and lactation length (LL) were non-significant.

Key words: Age, First calving, Lactation, Milk yield.

The Marathwada region of Maharashtra State has been awarded by two important breeds of cattle i.e. Deoni and Red Kandhari. Deoni cattle by virtue of their phenotype are believed to be developed from local and Gir cattle before 300 years. Deoni animals are dual purpose. In order to increase the milk production potential it is necessary to generate the high milk producing germplasm. It can be achieved by manipulating well-planned genetic composition followed by selection.

The fast change in the genetic composition can be achieved by the way of crossbreeding. In the present study an attempt has been made to analyze the effect of age at first calving on production traits like lactation milk yield and lactation length in halfbred interse progeny of Holstein Friesian x Deoni (HF x D) at 50 % exotic level.

For this study data of 122 calvings from 58 interse halfbred cows HF X Deoni maintained at Cattle Cross Breeding Project, Marathwada Agriculture University, Parbhani (MS) from 1990-2001 were utilized. The age at first calving is a genetic factor directly affects the economics of dairy farming. To study the effect of AFC the data was divided in three groups viz. A1 (1000 – 1520 days ), A2 (1521 – 2040 days) and A3 (2041 - 2560 days).

The overall least square means (LSM) for LMY in halfbred cattle was 1193.22 ± 44.79 kg (Table 1). The LSM for LMY in respect of halfbred interse cows (HF x D) affected by A1, A2 and A3 were 1148.49 ± 52.62, 1126.74 ± 56.82 and 1304.45 ± 86.21 kg , respectively (Table 1). The higher LMY is recorded in A3 followed by A1 and A2. The age at first calving had no significant effect on LMY and LL.

The overall least square means (LSM) for LL in halfbred cows was 284.88 ± 5.24 days (Table 1). The LSM for LL in respect of halfbred interse cows (HF x D) affected by A1, A2 and A3 were 290.99 ± 6.16, 279.22 ± 6.65 and 284.45 ± 10.09 days, respectively (Table 1). The higher lactation length recorded in A3 followed by A1 and A2. The age at first calving had no significant effect on LL.

The least square analysis technique (Harvey, 1991), was utilized to study the effect of AFC on LMY and LL.

The overall least square means (LSM) for LMY in halfbred cows was 1193.22 ± 44.79 kg (Table 1). The LSM for LMY in respect of halfbred interse cows (HF x D) affected by A1, A2 and A3 were 1148.49 ± 52.62, 1126.74 ± 56.82 and 1304.45 ± 86.21 kg , respectively (Table1). The higher LMY is recorded in A3 followed by A1 and A2. The age at first calving had no significant effect on LMY and LL. The present findings were in close agreement with the findings of Basu and Ghai (1977), Sharma et al (1982) in HF x Sahiwal, Siddiqui (1984) in HF x Sahiwal and Gahlot (2000) in various crossbred cattle. The variations were due to the management practices.

The overall LSM for LL in halfbred cows (HF x D) was 284.88 ± 5.24 days (Table 1). The LSM for LL in respect of halfbred interse cows affected by A1, A2 and A3 were 290.995 ± 6.16, 279.22± 6.65 and 284.45± 10.09 days, respectively (Table 1). The higher lactation length recorded in A1 group and lower in A3 and A2 group. The age at first calving had no significant effect on LL. Similar findings were also reported by Pandey et al. (1983) in
Table 1: Least square means (LSM) ± SE for lactation milk yield and lactation length affected by age at first calving

<table>
<thead>
<tr>
<th>Sources</th>
<th>Code</th>
<th>N</th>
<th>LMY</th>
<th>LL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>--</td>
<td>122</td>
<td>1193.22 ± 44.79</td>
<td>284.88 ± 5.24</td>
</tr>
<tr>
<td>Age at first</td>
<td>A1</td>
<td>59</td>
<td>1148.49 ± 52.62</td>
<td>290.95 ± 6.16</td>
</tr>
<tr>
<td>calving</td>
<td>A2</td>
<td>49</td>
<td>1126.74 ± 56.82</td>
<td>279.22 ± 6.65</td>
</tr>
<tr>
<td></td>
<td>A3</td>
<td>14</td>
<td>1304.45 ± 86.21</td>
<td>284.45 ± 10.09</td>
</tr>
</tbody>
</table>

HF x HR and HJ, Sharma et al. (1982), HF x Sahiwal crossbred cattle. The variations were due to the management practices.

Table 2: Analysis of variance for lactation milk yield and lactation length

<table>
<thead>
<tr>
<th>Sources</th>
<th>D.F.</th>
<th>LMY MSS</th>
<th>F value</th>
<th>LL MSS</th>
<th>F value</th>
</tr>
</thead>
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<td>Age at first</td>
<td>2</td>
<td>170900.0</td>
<td>1.75</td>
<td>1765</td>
<td>1.31</td>
</tr>
<tr>
<td>Error</td>
<td>119</td>
<td>98210.0</td>
<td></td>
<td>1345.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>269110.0</td>
<td></td>
<td>3110</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCES