The Silkworm, *Bombyx mori* L. is a typical monophagous insect and mulberry leaf (*Morus* spp.) is its sole food. Mulberry leaf quality is one of the key factors influencing the growth and development of silkworm, as the insect derives all the nutrients from mulberry leaf itself (Bahar et al., 2011). Mulberry varieties differ from each other in various characters and the best evaluator of mulberry is the silkworm itself. Feed consumption has a direct impact on larval weight, cocoon weight, silk production and number of eggs laid by a moth. (Dar et al., 1988; Machi and Katagiri., 1990; Sarkar and Fujita., 1994) also recorded the quality difference of mulberry varieties and their effect on silkworm growth. Nutrition in the larval stages significantly influences fecundity of resulting adults particularly where the adult female do not feed. (Mukerjee et al., 1983 and Gowda et al., 1988) have reported that adults resulting from heavy female pupae lay more eggs than light female pupal. 

**MATERIALS AND METHODS**

Commercially exploited silkworm race NB, of Jammu Division was selected for the study. Three treatments viz; Chakmajra, *S*146 and mixed leaves of both Chakmajra and S146. Mulberry varieties were designed for feeding the silkworm during experimentation with the objective to analyze the correlation of various economical parameters of bivoltine Silkworm race understudy during spring season in Jammu Division. Three trials were conducted in the rearing house being provided by the J&K Sericulture Development Department at asic Seed Station, Miran Sahib, Jammu, as per the methodology laid by (Krishna swami., 1978). Some cocoons were sent to Demonstration cum Technical Service Centre (DCTSC) Paloura, for recording reeling Parameters. Mean record of various characters of the three trials were incorporated in the final results. All the data were statistically analyzed by applying correlation coefficient.

**RESULT AND DISCUSSION**

Data obtained on the Economical parameters of silkworm *Bombyx mori* race NB are presented in Table 1 and 2. Silkworm cocoon is important commercial and economic product of rearing. Cocoon Characters are commercially most important and do have close relation with mulberry leaves as food. 

Correlation between pupal weight and fecundity: Significantly highest pupal weight and fecundity of the cocoon was recorded in case of mixed leaves of both Chakmajra and *S*146 mulberry variety (1.832g) and (680.00 no.) followed by Chakmajra Mulberry variety (1.652g) and (641.66 no.) but lowest value of pupal weight (1.538g) and fecundity (522.66 no.) were recorded on *S*146 mulberry variety. The observation revealed that not only pupal weight was found to be higher in cocoon obtained from mixed leaves but also have highest fecundity. However cocoons obtained from *S*146 mulberry variety.
The pooled data also show positive correlation between pupal weight and fecundity \( r' = +0.9144 \) in case of silkworm race NB\(_D_2\) on all three treatments. Table (1) Similar observation have already been recorded by Shaheen et al., (1992) who observed positive correlation between female pupal weight and fecundity in bivoltine silkworm Bombbyx mori L. Further, highly significant positive correlation of the fecundity in some other sericigenous moths has been demonstrated in Antheraea mylitta (Sidiqu et al., 1985), and Samia ricina (Ngalakshmammjam et al., 1988) with pupal weight.

**Correlation between fecundity and filament length:**

Correlation study of fecundity with filament length in the silkworm race NB\(_D_2\) show significant and negative correlation \( r' = -0.9287 \) on all three treatments. This indicates that when larvae of silkworm race under study fed on S\(_{146}\) mulberry variety leaves spun cocoons of longest filament length (914.00 m) with minimum fecundity (522.66 no.) followed by Chakmajra mulberry variety (804.33m) and (642.00 no.), whereas shortest filament length (634.33m) with maximum fecundity (680.00 no.) were recorded from mixed leaves of both Chakmajra and S\(_{146}\) mulberry variety. Highest fecundity in this race is a result of poor filament length and vice versa. This observation is in conformity with already documented observations by (Trag et al., 1992) who reported that SKUAST line worm significantly surpass the conventional race in character like filament length, however conventional races have an edge over the SKUAST line in fecundity.

**CONCLUSIONS**

From all these observation, it is concluded that not only pupal weight was found to be higher in cocoons obtained from mixed leaves but also have highest fecundity. Whereas on S\(_{146}\) mulberry variety lowest pupal weight with minimum fecundity was recorded. As for as Chakmajra mulberry variety is concerned, it attained 2\(^{nd}\) rank in these parameters in case of Silkworm race understudy. This indicates that no. of eggs laid by a female moth increased in pupal weight and decreased with decrease in pupal weight. The pooled data also show significant positive correlation between pupal weight and fecundity on all three treatments.

However, larvae of silkworm race under study fed on S\(_{146}\) mulberry variety leaves spun cocoons of longest filament length with minimum fecundity. Whereas shortest filament length with maximum fecundity was recorded from mixed leaves. Chakmajra mulberry variety has attained 2\(^{nd}\) rank in these parameters also, which depicts that there is negative correlation between filament length and fecundity on all three treatments.

**ACKNOWLEDGEMENT**

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**Table 1:** Correlation of pupal weight with fecundity in Silkworm Bombyx mori race NB\(_D_2\) on the basis of pooled data of all the varieties.

<table>
<thead>
<tr>
<th>Race</th>
<th>Variety</th>
<th>Pupal wt (g)</th>
<th>Fecundity (no.)</th>
<th>Correlation Coefficient (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NB(_D_2)</td>
<td>Chakmajra</td>
<td>1.652</td>
<td>614.66</td>
<td>+0.9144*</td>
</tr>
<tr>
<td></td>
<td>S(_{146})</td>
<td>1.538</td>
<td>522.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed (Chak + S(_{146}))</td>
<td>1.832</td>
<td>680.00</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2:** Correlation of fecundity with filament length in Silkworm Bombyx mori race NB\(_D_2\) on the basis of pooled data of all the varieties.

<table>
<thead>
<tr>
<th>Race</th>
<th>Variety</th>
<th>Fecundity (no.)</th>
<th>Filament Length (m)</th>
<th>Correlation coefficient (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NB(_D_2)</td>
<td>Chakmajra</td>
<td>641.66</td>
<td>804.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S(_{146})</td>
<td>522.66</td>
<td>914.00</td>
<td>-0.9287*</td>
</tr>
<tr>
<td></td>
<td>Mixed (Chak + S(_{146}))</td>
<td>680.00</td>
<td>701.33</td>
<td></td>
</tr>
</tbody>
</table>
Jammu, for providing rearing house and other facilities. Sincere
grateful thanks to all members of Demonstration cum Technical
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took pain by providing all the facilities for reeling and whole
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