Effect of Different Sowing Dates on Seed Index, Lint and Ginning Out-turn of Various Cotton Varieties

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Abstract: The field experiment was conducted to study the effects of sowing dates on seed index, lint index and ginning out-turn of three cotton varieties. The study revealed that the sowing dates produced significant difference in above parameters. The sowing on 10th May produced heavier seed index (6.21 g), maximum lint index (4.04 g) and high ginning out-turn percent (33.36). Among the genotypes, Rehmani performed better in seed index (8.48g), lint index (4.04g) and G.O.T. percent (33.71). It is recommended that for lower part of Sindh, Pakistan, the cotton crop may be planted in early to mid of May month. Very early and delayed sowings reduces cotton crop yield due to change in environmental factors of the region, which in turn affects plant’s life cycle and vigorous growth.

Keywords: Cotton, sowing dates, yield, G.O.T

Introduction
Cotton is an important fiber crop of Pakistan and contributes too much for the national exchange. Its yield is far low as compare to other countries. Among the constraints of low yield, the proper time of sowing the crop is of vital importance. It has been concluded that boll weight gradually decreased with the delay in sowing time (Saroya et al., 1980). Khan et al. (1966), observed that the seed index was higher with early than with late sowing of cotton crop. Memon and Malik (1970), stated that the bolls formed with earlier flowers produced higher lint index, seed weight and seed cotton weight per boll. Taha (1982) concluded that the ginning-out-turn (G.O.T.) decreased with the late sowing. Looking the previous work done by various researchers and economic importance of the cotton crop, the study was conducted to evaluate the appropriate sowing time for boosted G.O.T and yield of cotton crop.

Materials and Methods
An experiment was conducted at Latif Experimental Farm, Sindh Agriculture University, Tandojam, to observe the effect of different sowing dates on seed index, lint index and ginning-out-turn of three genotypes. The experiment was laid out in a split plot design with four replications including all conditions of the treatments. The net plot size was 13 x 6 m² was maintained the details of treatments were as under.

Table 1: Seed index, lint index and ginning-out-turn of cotton varieties under different sowing times

<table>
<thead>
<tr>
<th>Genotypes</th>
<th>Sowing Dates</th>
<th>10th April (Early)</th>
<th>10th May (Medium)</th>
<th>10th June (Late)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed Index (g)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehmani</td>
<td>8.13</td>
<td>9.45</td>
<td>7.88</td>
<td>8.48</td>
<td></td>
</tr>
<tr>
<td>Qalandri</td>
<td>7.35</td>
<td>7.40</td>
<td>6.62</td>
<td>7.19</td>
<td></td>
</tr>
<tr>
<td>NIAB-78</td>
<td>6.95</td>
<td>7.80</td>
<td>6.87</td>
<td>7.20</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>7.47b</td>
<td>8.21a</td>
<td>7.16b</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Lint Index (g)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehmani</td>
<td>4.25</td>
<td>3.98</td>
<td>3.87</td>
<td>4.033</td>
<td></td>
</tr>
<tr>
<td>Qalandri</td>
<td>3.23</td>
<td>4.13</td>
<td>3.16</td>
<td>3.506</td>
<td></td>
</tr>
<tr>
<td>NIAB-78</td>
<td>3.58</td>
<td>4.02</td>
<td>3.78</td>
<td>3.793</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.68ab</td>
<td>4.04a</td>
<td>3.60b</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Ginning-Out-turn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rehmani</td>
<td>33.52</td>
<td>34.58</td>
<td>33.07</td>
<td>33.71</td>
<td></td>
</tr>
<tr>
<td>Qalandri</td>
<td>33.10</td>
<td>33.65</td>
<td>32.48</td>
<td>33.07</td>
<td></td>
</tr>
<tr>
<td>NIAB-78</td>
<td>33.18</td>
<td>33.73</td>
<td>32.89</td>
<td>33.28</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>33.26b</td>
<td>33.98a</td>
<td>32.81b</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Means followed by similar letter do not differ significantly from each other at P<0.05

Results and Discussion
Seed index: The analysis of variance indicates that the heavier seeds were produced in medium sowing date of 10th May followed by early and late sowing of 10th April and 10th June.
respectively, which are statistically significant (Table 1). Among
the varieties
Rehmani produced heavier seed as compared to NIAB-78 and
Galandri. The differences in mean value of seed index given by all
three varieties were highly significant, but their interactions with
different sowing dates were non-significant. These results are in
conformity with the findings of Memon and Malik (1970), who
reported that very early and late sowings significantly reduced
the cotton crop parameters, because plants in these conditions were
able to grow vigorously in the early growth phase. This early
vigorous growth phase supports plants to produce photosynthesis
for food manufacture. The differences for production of seed index in the varieties was due to varietal
genetic potentiality.

Lint index and ginning out-turn: It was observed that medium
sowing of 10th May produced the highest lint yield in Rehmani
cotton variety as compared to other rest of varieties and sowing
dates (Table 1). The differences in these both crop characters
due to various sowing dates were statistically significant. The
results are fully supported by Taha (1982) who also observed that
delayed sowing of cotton crop decreases the G.O.T, which in turn
economically does not favour the growers. In the delayed sowing
the crop’s photosynthetic efficient is affected by environmental
and adephic factors and plant lifecycle became shorten and
sometimes stunted growth was observed. This stunted and weak
growth has adverse effects on all crop parameters including yield
and G.O.T of the cotton crop. Therefore, it is concluded that for
the Lower part of Sindh province the appropriate sowing time is
the start of or mid of May. Further delay or very early sowing is
not economically favourable for the grower.

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