TRAILED OFFSET
DISC HARROW, 8 X 8 (AZAD)
(TRACTOR DRAWN)
7. FIELD TEST

The field test of disc harrow was conducted at NRFMT&TI farm for 35.00 hrs. with HMT-6522 & Standard 460 DI tractor as prime mover for operating the harrow. The working of disc harrow was observed satisfactory.

During the field test, datas were collected and analyzed for quality of work, rate of work and fuel consumption of prime mover and draft of implement. The details of test results are given in Annexure-I and summarized in Table I.
7.1 Rate of work
The speed of operation of the tractor with disc harrow ranged from 7.41 to 7.68 kmph in H-2 gear of HMT -652T tractor.
The area covered ranged from 1.00 to 1.20 ha/h while fuel consumption was observed to be 3.90 to 6.0 l/h.

7.2 Quality of work
Field performance of the harrow was observed to be satisfactory. Average depth of cut and average working width ranged from 11.8 to 14.0 cm & 1.86 to 1.89 m respectively

8 EASE OF OPERATION AND ADJUSTMENT
The gang angle can be adjusted easily, and no difficulty was observed in operation and adjustment of harrow for field operation.

9 WEAR OF DISC
Initial and final weight of the discs of harrow before and after 35.00 hrs. of field test were taken. Wear in the disc was observed in the range of 3.19 to 4.65 %.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Initial weight (gms)</th>
<th>Final weight (gms)</th>
<th>Weight loss (gm)</th>
<th>(%) wear on mass basis</th>
<th>(%) wear per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>9400</td>
<td>9000</td>
<td>400</td>
<td>4.25</td>
<td>0.121</td>
</tr>
<tr>
<td>2.</td>
<td>9400</td>
<td>9100</td>
<td>300</td>
<td>3.19</td>
<td>0.091</td>
</tr>
<tr>
<td>3.</td>
<td>9600</td>
<td>9175</td>
<td>425</td>
<td>4.43</td>
<td>0.127</td>
</tr>
<tr>
<td>4.</td>
<td>10000</td>
<td>9540</td>
<td>460</td>
<td>4.60</td>
<td>0.131</td>
</tr>
<tr>
<td>5.</td>
<td>9400</td>
<td>9050</td>
<td>350</td>
<td>3.72</td>
<td>0.106</td>
</tr>
<tr>
<td>6.</td>
<td>10000</td>
<td>9535</td>
<td>465</td>
<td>4.65</td>
<td>0.133</td>
</tr>
</tbody>
</table>

10. LUBRICATION AND SERVICING
Before start of the field tests, the bolts & nuts were tightened and greasing was done to keep the machine in proper running condition.
11. **BRAKDOWN AND REPAIRS**
   No breakdown was observed during 35.00 hours field test.

12. **COMMENTS AND RECOMMENDATIONS**
   12.1 The dimensions of three point linkage of the implement do not conform to IS: 4468-March 2007(Part-I). Standard three point linkage system should be used at regular production level.
   12.2 Maneuverability of tractor with harrow and quality of work were observed to be satisfactory.
   12.3 The hardness of disc is not conforming to IS: 4366 (Part I)-2001. The disc gradeness conforming to said code should be used at regular production level.
   12.4 The marking on the harrow as well as in disc should be done as per Indian Standards.
   12.5 Carbon & manganese content in discs of harrows are not as per the recommended values in IS: 9442-1992. Standard discs should be used at regular production level.
   12.6 The specifications of spool do not comply with IS: 7230-2001. Therefore, standard spools conforming to IS code under reference should be used at regular production level.
   12.7 The proper protection should be done on non wearing parts of disc in accordance with IS: 4366-2001.
   12.8 A marking on identification plate should be provided on each harrow as per Cl. 9.1 of IS: 6635-1972.

13. **LITERATURE**
   The manufacturer has developed the literature of machine in a single booklet form wherein operating instruction technique, off season storage technique are not there. Therefore, the manufacturer should develop a manual in Hindi or English & other regional languages as per IS: 8132-1983 for the guidance of users & technical personnel.

**TESTING AUTHORITY**

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>(R.M. TIWARI) ASSTT. ENGINEER (W/S)</td>
<td></td>
</tr>
<tr>
<td>(P. K. CHOPRA) SENIOR AGRICULTURAL ENGINEER</td>
<td></td>
</tr>
<tr>
<td>(A.N. MESHRAM) DIRECTOR</td>
<td></td>
</tr>
</tbody>
</table>

Test report compiled by Sh. B. N. Dixit (Tech. Asstt.)

**APPLICANT'S COMMENTS** : No comments received

NORTHERN REGION FARM MACHINERY TRAINING AND TESTING INSTITUTE, HISAR