COMMERCIAL TEST REPORT

TRACTOR MOUNTED PADDY DISK HARROW
(JOGINDRA 7X7)

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURE & COOPERATION)

NORTHERN REGION FARM MACHINERY TRAINING AND TESTING INSTITUTE
TRACTOR NAGAR, SIRSA ROAD, HISAR-125001 (HARYANA)

Telephone: 01662-276824, 276172
Website: http://dacnet.nic.in/nrfmtti
Telefax No.: 01662-276984
E-Mail: fmti-nr@nic.in
### TRACTOR MOUNTED PADDY HARROW (JOGINDRA 7 x 7)  

| Cl. 7.10 | Operation & maintenance manual and set of tools including adjustable wrench and grease gun should be provided. | Not provided | Does not conform |
| Cl. 8 Finish & workmanship Cl. 8.2 | Welding of various parts shall be satisfactory in all respect. | Welding is rigid and satisfactory. | Conforms |
| Cl. 8.3 | The components should be free from pits, and other visual defects. | The components are free from pits, and other visual defects. | Conforms |
| Cl. 8.4 | The exposed metallic parts shall be free from rust and shall have protective coating. | Exposed metallic parts are painted | Conforms |
| Cl. 9.1 Marking Cl. 9.1.1 | Each harrow shall be marked with the following particulars: - | | |
| a) manufacturer’s name & trade mark if any | Marked with “manufacturer’s name” only | Does not conform |
| b) type and size | Not marked | Does not conform |
| c) Batch and code number | Not marked | Does not conform |

### 7. FIELD TEST

The field test of disc harrow was conducted at HLRDC farm Hisar & Hansi for 35.0 hrs. with Farmtrac 35 DB & Farmtrac 60 DI tractors as prime mover for operating the harrow. The working of paddy disc harrow was observed satisfactory.

During the field test, data 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-II and summarized in Table I.

### TABLE - I

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tractor used</td>
<td>Farmtrac 35 DB &amp; Farmtrac 60 DI</td>
</tr>
<tr>
<td>2.</td>
<td>Type of soil</td>
<td>Sandy &amp; Clay Loam</td>
</tr>
<tr>
<td>3.</td>
<td>Depth of standing water, cm</td>
<td>8.8 to 12.4</td>
</tr>
</tbody>
</table>

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7.1 Rate of work
The speed of operation of the tractor with paddy harrow varied from 4.20 to 4.52 kmph in H-1 gear of Farmtrac 35 DB & Farmtrac 60 DI tractor.
The area covered ranged from 0.73 to 1.13 ha/h while fuel consumption was observed to be 3.25 to 5.00 l/h.

7.2 Quality of work
Field performance of the paddy harrow was observed to be satisfactory. Average depth of puddle & puddling index ranged from 13.0 to 18.8 and 64.4 to 69.5 % 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
The wear of disc on mass basis was analyzed by weight before & after the completion of field operation after 35.0 hrs. of field test. Wear in the disc was observed in the range of 2.42 to 6.25 %

<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>5800</td>
<td>5500</td>
<td>300</td>
<td>5.17</td>
<td>0.15</td>
</tr>
<tr>
<td>2.</td>
<td>5600</td>
<td>5400</td>
<td>200</td>
<td>3.57</td>
<td>0.10</td>
</tr>
<tr>
<td>3.</td>
<td>5400</td>
<td>5220</td>
<td>180</td>
<td>3.33</td>
<td>0.10</td>
</tr>
<tr>
<td>4.</td>
<td>6000</td>
<td>5650</td>
<td>350</td>
<td>5.83</td>
<td>0.17</td>
</tr>
<tr>
<td>5.</td>
<td>6400</td>
<td>6000</td>
<td>400</td>
<td>6.25</td>
<td>0.18</td>
</tr>
<tr>
<td>6.</td>
<td>6200</td>
<td>6050</td>
<td>150</td>
<td>2.42</td>
<td>0.07</td>
</tr>
</tbody>
</table>

10. LUBRICATION AND SERVICING
Before start of field tests, bolts and nuts were tightened and greasing was done to keep the machine in proper condition.

11. BRAKEDOWNS AND REPAIRS
No breakdown was observed during 35.0 hours of field test.
12. COMMENTS AND RECOMMENDATIONS

12.1 The dimensions of three point linkage of the implement does not conform to IS: 4468-March 2001(Part-I). A 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 as satisfactory.

12.3 The Hardness of disc conforms to IS: 4366 (Part I) – 1985.

12.4 The marking on disc should be done as per Cl.9.1.1 of IS: 6635-2001.

12.5 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.

12.6 Carbon & Manganese content of chemical composition of disc is not within range of IS: 9442-1992. The discs with chemical composition of primary elements conforming to the code under reference should be used at regular production level.

13. LITERATURE

The manufacturer has developed the literature of machine in a single booklet form wherein detailed spare part's list operating instructions, off season storage technique are not there. Therefore, the manufacturer needs to modify it in Hindi or English & other regional languages as per IS: 8132-1983 for the guidance of users & technical personnel.

TESTING AUTHORITY

(R.M. TIWARI)
ASSST. ENGINEER (W/S)

(P. K. CHOPRA)
SENIOR AGRICULTURAL ENGINEER

(A. N. MESHRAM)
DIRECTOR

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

APPLICANT’S COMMENTS

No comments received