TRACTOR OPERATED POWER SPRAYER
‘KHUSHI’

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

UTTAR KSHETRA KRUSHI MANDAL (EMERGENT KRUSHI 
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<table>
<thead>
<tr>
<th>Clause No.</th>
<th>Specified requirements</th>
<th>Observation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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</tbody>
</table>

**Cl. 3 MATERIALS**  
IS: 11313-Dec. 2004

<table>
<thead>
<tr>
<th>Cl. 3.2</th>
<th>All metallic parts coming in contact with the pesticide should preferably be of the same material to minimize bimetallic corrosion.</th>
<th>All the parts coming in contact with pesticide are made of brass.</th>
<th>Conforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cl. 3.3</td>
<td>The material used for different components shall be declared by the manufacturer in the manual.</td>
<td>Not declared in the manual.</td>
<td>Does not conform</td>
</tr>
</tbody>
</table>

4. **Performance Requirements**  
IS: 11313-Dec. 2004

<table>
<thead>
<tr>
<th>Cl. 4.1</th>
<th>When tested in accordance with the method given in 6.1.1.1 of IS: 8548-Dec. 2004, the pump shall be capable of discharging a minimum of 8000 ml water per minute at its rated speed and rated pressure.</th>
<th>Pump is capable of discharge 8450 ml/min. of water at 950 rpm speed of pump &amp; 28kg/cm² pressure</th>
<th>Conforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cl. 4.1.1</td>
<td>The discharge rate shall be declared by the manufacturer.</td>
<td>Declared 36 l/min.</td>
<td>Conforms</td>
</tr>
<tr>
<td>Cl. 4.2</td>
<td>The volumetric efficiency shall be minimum 75 percent</td>
<td>Volumetric efficiency is 81%</td>
<td>Conforms</td>
</tr>
<tr>
<td>Cl. 4.3</td>
<td>Endurance test shall be done in accordance with 7 of IS:8548-Dec. 2004.</td>
<td>Satisfactory</td>
<td>Conforms</td>
</tr>
</tbody>
</table>

5. **CONSTRUCTION REQUIREMENT**  
IS: 11313-Dec. 2004

<table>
<thead>
<tr>
<th>5.1</th>
<th>The manufacturer shall declare the maximum pressure achievable.</th>
<th>Declared, 400 psi (28Kg/cm²)</th>
<th>Conforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2</td>
<td>The pump output at maximum pressure and rated speed shall be declared by the manufacturer.</td>
<td>Declared 36 (l/m)</td>
<td>Conforms</td>
</tr>
<tr>
<td>5.3</td>
<td>The pump shaft power requirement at maximum pressure and rated speed shall be declared by the manufacturer.</td>
<td>Declared, 3.0 hp</td>
<td>Conforms</td>
</tr>
<tr>
<td>Cl. 6.6</td>
<td>IS: 8548- Dec. 2004</td>
<td>Visual observations</td>
<td>Test conducted at 950 rpm. pump data give in annexure-V</td>
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<td></td>
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<td>During and after short-run test, the sprayer shall be visually examined. The observations given in item (6) of Appendix-C shall be made and recorded.</td>
<td>Sprayer examined visually and observations are given in Annexure-VI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cl. 6</th>
<th>IS:11313- Dec. 2004</th>
<th>Workmanship and Finish</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td></td>
<td>All components of the sprayer shall be free from burrs, pits and other visual defects which may be detrimental for their use.</td>
<td>All components of sprayer are free from burrs, pits and other visual defects.</td>
<td>Conforms</td>
</tr>
<tr>
<td>6.2</td>
<td></td>
<td>The exposed metallic parts shall have a protective coating to prevent surface deterioration.</td>
<td>Satisfactory</td>
<td>Conforms</td>
</tr>
</tbody>
</table>

### 7. Marking and Packing

#### 7.1

<table>
<thead>
<tr>
<th>a)</th>
<th>Manufacturer’s name or registered trade mark</th>
<th>Marked ‘KHUSHI SPRAYER’</th>
<th>Conforms</th>
</tr>
</thead>
<tbody>
<tr>
<td>b)</td>
<td>Tank capacity</td>
<td>Marked 500 l.</td>
<td>Conforms</td>
</tr>
<tr>
<td>c)</td>
<td>Batch or Code No.</td>
<td>Marked ‘Sr. No. 7/ Batch No. 011’</td>
<td>Conforms</td>
</tr>
</tbody>
</table>

### 6. COMMENTS

1. Dimensions of three linkage are not conforming to Indian Standard. It should be improved at production level.
2. Operator’s safety kit should be provided with the sprayers essentially.
3. ‘KHUSHI’ tractor operated power sprayer conforms with all the requirements specified in IS: 11313-Dec. 2004- Batch or code no. It should be incorporated at production level.

5. The following constructional and functional requirements are not conforming to IS standards:
   - Cl. 3.3 IS: 11313- Dec. 2004 – Material used for different component (declaration from manufacturers)
   - Cl. 5.9 IS: 11313 Dec. 2004 – Suction Spout
   - Cl. 5.10 IS: 11313 Dec. 2004 – Delivery Spout
   - Cl. 6.5 IS: 8548, 1990 – Mechanical vibration

6. A printed literature/manual should be brought out in Hindi or English and regional language as per IS:1832.

**TESTING AUTHORITY**

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

(P. K. CHOPRA)
SENIOR AGRICULTURAL ENGINEER

(A. N. MEHSHRAM)
DIRECTOR

**APPLICANT'S COMMENTS**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Our reference</th>
<th>Applicant comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Para 3.8.1 Three point linkage</td>
<td>We shall improve dimensions of three point linkage at production level</td>
</tr>
<tr>
<td>2.</td>
<td>Para 3.9 Accessories for operator's safety against pesticides</td>
<td>We shall provide the operator’s safety kit.</td>
</tr>
<tr>
<td>3.</td>
<td>Cl. 5.9 and 5.10 IS:11313-Dec., 2004 Suction Spout and delivery spout</td>
<td>We shall also improve the sprayer pump as per requirement of Indian Standard</td>
</tr>
<tr>
<td>4.</td>
<td>Cl. 5.20 IS 11313 – Dec. 2004</td>
<td>We shall provide the printed literature/ manual to the farmers in Hindi or in regional language.</td>
</tr>
</tbody>
</table>