COMMERCIAL TEST REPORT

ZERO TILL SEED CUM FERTILIZER DRILL
(VIKAS - 9 ROWS)

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

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8. FIELD TEST
Field test of Seed cum fertilizer drill was conducted at this Institute for 20.3 hours, consisting of 6 trials. The implement was used for sowing Wheat PBW-373 & DBW-17 in paddy harvested field. The field was manual harvested and combine harvested followed by straw burnt on field. The detailed test results are given in Annexure-IV and are summarised as under:

Summary of field test results:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Parameters</th>
<th>Range of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Av. Depth of seed sowing, cm</td>
<td>8.0 to 8.8</td>
</tr>
<tr>
<td>2</td>
<td>Av. Depth of fertilizer sowing, cm</td>
<td>8.2 to 9.3</td>
</tr>
<tr>
<td>3</td>
<td>Av. Width of sowing, m</td>
<td>1.97 to 2.02</td>
</tr>
<tr>
<td>4</td>
<td>Av. Forward speed, kmph</td>
<td>3.49 to 3.73</td>
</tr>
<tr>
<td>5</td>
<td>Av. Draft, Kgf</td>
<td>375 to 475</td>
</tr>
<tr>
<td>6</td>
<td>Field capacity, ha/h</td>
<td>0.490 to 0.580</td>
</tr>
<tr>
<td>7</td>
<td>Field efficiency, %</td>
<td>65.3 to 81.8</td>
</tr>
<tr>
<td>8</td>
<td>Seed rate, Kg/ha</td>
<td>100 to 110.0</td>
</tr>
<tr>
<td>9</td>
<td>Fertilizer rate, Kg/ha</td>
<td>112.5 to 125.5</td>
</tr>
<tr>
<td>10</td>
<td>Fuel consumption, l/h</td>
<td>2.25 to 3.25</td>
</tr>
</tbody>
</table>

8.1 Quality of work:
The average depth of seed and fertilizer placement was observed as 8.0 to 8.8 & 8.2 to 9.3 respectively. Seed and fertilizer rate was found 100.0 to 110.0 Kg/ha and 112.5 to 125.5 Kg/ha, respectively.

8.2 Rate of Work & Fuel consumption:
The average width of sowing was observed as 1.97 to 2.02 m. The area covered is 0.490 to 0.580 ha/h and the fuel consumption varied from 2.25 to 3.25 l/hr.
8.3 **Field efficiency and labour requirement:**
Field efficiency of seed drill was observed as 65.3 to 81.8 \%. Two labours are required to operate the drill. One skilled labour to make adjustments / calibration of the seed drill and operate the tractor and other unskilled to load the seed and fertilizer boxes and cleaning of furrow openers as and when required.

8.4 **Wear of soil engaging component:**
The wear of furrow openers varied from 1.52 to 1.71 \% by mass basis which is considered to be normal.

9. **LUBRICATION & SERVICING**
Greasing was done daily before starting the operation.

10. **EASE OF OPERATION AND ADJUSTMENT**
Operation and adjustment of seed cum fertilizer drill was observed to be satisfactory.

11. **BREAKDOWN AND REPAIRS**
No breakdown was observed during 20.3 hrs. of operation of seed drill.

12. **COMMENTS AND RECOMMENDATIONS**

i) The dimensions of seed metering mechanism does not conform to the requirement of IS: 6813-2000. Suitable improvement should be done, at production level.

ii) Dimension of three point linkage does not conform to the requirements of IS:4468-1997. Suitable improvements should be done & incorporated seed drill at regular production level.

iii) The marker is not provided in machine. This may be provided as per requirement of IS :6813-2000.

iv) Provision should be made to drop fertilizer at a minimum of 25 mm to the side of the seed.

v) Provision should be made to adjust fertilizer application rate upto 1000 kg/ha.