ZERO TILL SEED CUM FERTILIZER DRILL (11 ROWS)
“A.S.S.”

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 H.L.R.D.C.Farm for 20.2 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>7.2 to 9.2</td>
</tr>
<tr>
<td>2</td>
<td>Av. Depth of fertilizer sowing, cm</td>
<td>8.3 to 10.3</td>
</tr>
<tr>
<td>3</td>
<td>Av. Width of sowing, m</td>
<td>2.0 to 2.01</td>
</tr>
<tr>
<td>4</td>
<td>Av. Forward speed, kmph</td>
<td>2.73 to 3.30</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>0.431 to 0.488</td>
</tr>
<tr>
<td>7</td>
<td>Field efficiency, %</td>
<td>62.0 to 85.5</td>
</tr>
<tr>
<td>8</td>
<td>Seed rate, Kg/ha</td>
<td>91.0 to 96.0</td>
</tr>
<tr>
<td>9</td>
<td>Fertilizer rate, Kg/ha</td>
<td>105 to 122.1</td>
</tr>
<tr>
<td>10</td>
<td>Fuel consumption, l/h</td>
<td>2.35 to 3.47</td>
</tr>
</tbody>
</table>

8.1 Quality of work:
The average depth of seed and fertilizer placement was observed as 7.2 to 9.2 & 8.3 to 10.3 respectively. Seed and fertilizer rate was found 91.0 to 96.0 Kg/ha and 105 to 122.1 Kg/ha respectively.

8.2 Rate of Work & Fuel consumption:
The average width of sowing was observed as 2.0 to 2.1 m. The area covered is 0.431 to 0.488 ha/h and the fuel consumption varied from 2.35 to 3.47 l/hr.

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8.3 Field efficiency and labour requirement:

Field efficiency of seed drill was observed as 62 to 85.5%. 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 1.61 to 3.19 % 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 20-2 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.