

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या / No. : Imp. 80/120
माह / Month : February, 2011



Paras Automatic Seed cum Fertilizer Drill (Animal Drawn)



सत्यमेव जयते

भारत सरकार
GOVT OF INDIA

कृषि मन्त्रालय

MINISTRY OF AGRICULTURE

कृषि एवं सहकारिता विभाग

DEPARTMENT OF AGRICULTURE AND COOPERATION

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

विश्वनाथ चारिआलि, जिला-शोणितपुर (असम)

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1. SCOPE OF TEST

The scope of test was to check and assess the following

1.1 Laboratory Test

- i) Checking of specifications.
- ii) Metering mechanism to meter seed and fertilizer at desired rate.
- iii) Variation in dropping of seed and fertilizer in different opener (Inter opener variation).
- iv) Variation of seed & fertilizer rate due to quantity of seed and fertilizer in the seed box and fertilizer box.
- v) Even-ness of seed distribution.
- vi) Hardness and chemical composition of the soil engaging parts.
- vii) Visible damage to the seeds caused by metering mechanism.

1.2 Field Test

- i) Rate of work
- ii) Quality of work
- iii) Power requirement
- iv) Ease of operation and adjustment
- v) Field efficiency and Labour requirement
- vi) Breakdowns & repairs

2. METHOD OF SELECTION

The seed cum fertilizer drill was directly submitted for test by applicant at this institute. Therefore, the method of selection is not known.

3. TEST CODE / PROCEDURE

The implement was tested in accordance with the relevant clauses of Indian Standards

- i) IS: 6316: 1993 (Sowing equipment – seed-cum-fertilizer drill- Test code)
- ii) IS: 6813: 2000 (Sowing equipment – seed-cum-fertilizer Drill -Specification)

4. SPECIFICATIONS

4.1 General

Manufacturer	: M/S Bothara foundry and Machine Works, Plot No.: 35 to 40, Industrial estate, Kedgaon, Nagar – Pune Road, Ahmednagar. –414 005
Name of Machine	: Seed cum fertilizer drill (Automatic)
Type of implement	: Animal drawn
Make	: Paras
Model	: Gear Type Automatic(apa)
Serial No	: 55 (apa)
Year of Manufacturer	: 2009 (apa)
Size of drill (mm)	: 3 X 280 (adjustable)
Power source	: A pair of bullock
Type of seed to which the drill is designed to sow	: Wheat, Jawar, Bajari, Soyabeen, Green gram, Kardi, Red gram, Maize and sunflower (apa)

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11. COMMENTS & RECOMMENDATIONS

- 11.1 The seed cum fertilizer drill is provided with shoe type furrow openers, which do not conform to the requirement as per IS 6813-2000. This should be looked into for corrective action.
- 11.2 The seed metering mechanism does not conform to IS 6813-2000. The same should be provided as per relevant Indian Standard.
- 11.3 Self-locking mechanism is not provided on the seed cum fertilizer box. This should be provided on production level.
- 11.4 Suitable clutches are not provided to stop the movement of metering mechanisms when the wheels are turned in reverse direction and transport positions. This should be looked into.
- 11.5 The fertilizer rate is not adjustable up to 1000 kg/ha. This should be looked into.
- 11.6 A calibration chart is not provided on the drill. Hence it is recommended that the permanent type metallic calibration plate indicating the metering position and quantity of seed and fertilizer should be riveted on the non wearing part of the drill.
- 11.7 Suitable row marker should be provided to maintain equal row spacing.
- 11.8 Necessary tools should be supplied with the drill to attend the adjustments and repairs.
- 11.9 It is recommended that the drill should be provided with an identification plate having details like name of manufacturer or trade name, model, serial number of machine, year of manufacture, type, size, mass and type of seed suitable to sow. The plate should be riveted on the machine on non wearing part.

12. ADEQUACY OF LITERATURE

The manufacturer has not developed operators manual, part's catalogue and service manual etc. as per Is: 8132-2004. Hence the same should be provided containing performance, special features, drawing and dimensions of the implement in English, Hindi and other regional languages as per IS: 8132-2004.

TESTING AUTHORITY

H. L. YADAV AGRICULTURAL ENGINEER	
P. K. PANDEY SENIOR TEST ENGINEER	
M. K. VISWAKARMA DIRECTOR	

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13 APPLICANT'S COMMENT

Para No.	Our Reference	Applicant's comment
13.1	11.1	We have now modified our shoe type furrow opener as per required dimensions & tolerances.
13.2	11.2	We have rectified now moulding pattern of both fluted feed roller as per requirement.
13.3	11.4	We have now developed suitable technique to stop the movement of metering mechanism when drill is in idle position.
13.4	11.5	We are trying to increase fertilizer rate at maximum adjustable up to higher side.
13.5	11.6	We are now providing a permanent type metallic calibration plate which indicates the metering position and quantity of seed/fertilizer.
13.6	11.7	We are now providing a row marker to maintain equal row spacing.
13.7	11.9	We are now providing identification plate having all required details of drill. This plate is being riveted on seed cum fertilizer box.
13.8	12	We have now provided a booklet in which all information is contained in English, Hindi & other regional language.

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