व्यावसायिक परीक्षण रिपोर्ट

COMMERCIAL TEST REPORT

संख्या / No. : Imp.169/221

माह / Month: March, 2015

Exhibit (2)

NEW SWAN, AUTOMATIC POTATO PLANTER (NSE PP 4R)

सत्यमेव जयते

भारत सरकार

GOVT OF INDIA

कृषि मन्त्रालय

MINISTRY OF AGRICULTURE

कृषि एवं सहकारिता विभाग

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1. SCOPE OF TEST

The scope of test was to check and assess the following: -

1.1 LABORATORY TEST:

- Checking of specifications
- Metering mechanism to seed at desired rate
- Variation in dropping of seed among different openers (inter opener variation).
- Variation in dropping of seed due to change in quantity of seed in the seed box.
- Seed damage determination test
- Uniformity of seeding
- Hardness and chemical composition of the soil engaging parts.

1.2 FIELD TEST:

- Rate of work
- Quality of work
- Power requirement
- Ease of operation, maintenance and adjustments
- Field efficiency and labour requirement
- Defects, breakdowns and repairs

2. METHOD OF SELECTION

The test sample was directly submitted for test by the applicant, hence, method of selection is not known.

3. TEST CODE/PROCEDURE

The following test codes were followed for testing of automatic potato planter.

i) IS: 11893-1986 (Reaffirmed in 2002)	:	Specification for Potato Planter, Semi Automatic
ii) IS: 9856-1999	:	Test code for Potato Planters
iii) IS:4468-2007 (Reaffirmed in 2012)	:	Agricultural wheeled tractors-rear mounted three- point linkages

4. SPECIFICATIONS

4.1 General

Name of machine	:	Automatic Potato Planter
Manufacturer's name and address	:	M/s. New Swan Multitech Limited 622, Industrial Area-B Ludhiana-141003(Punjab)
Make	:	NEW SWAN

Model	:	NSE PP 4R
Type	:	Automatic
Serial No.	:	Not specified
Year of manufacture	:	Not specified
Size of planter (mm)	:	5 x 63
Power source recommended (hp)	:	70 hp and above
Prime mover used during test	:	New Holland 7500 Tractor (Refer Annexure V)
Type of seed to which the planter is design to sow (apa.)	:	Potato
Seed on which test trials where requested to be conducted	:	Potato

4.2 Constructional details (Refer Fig. 1)

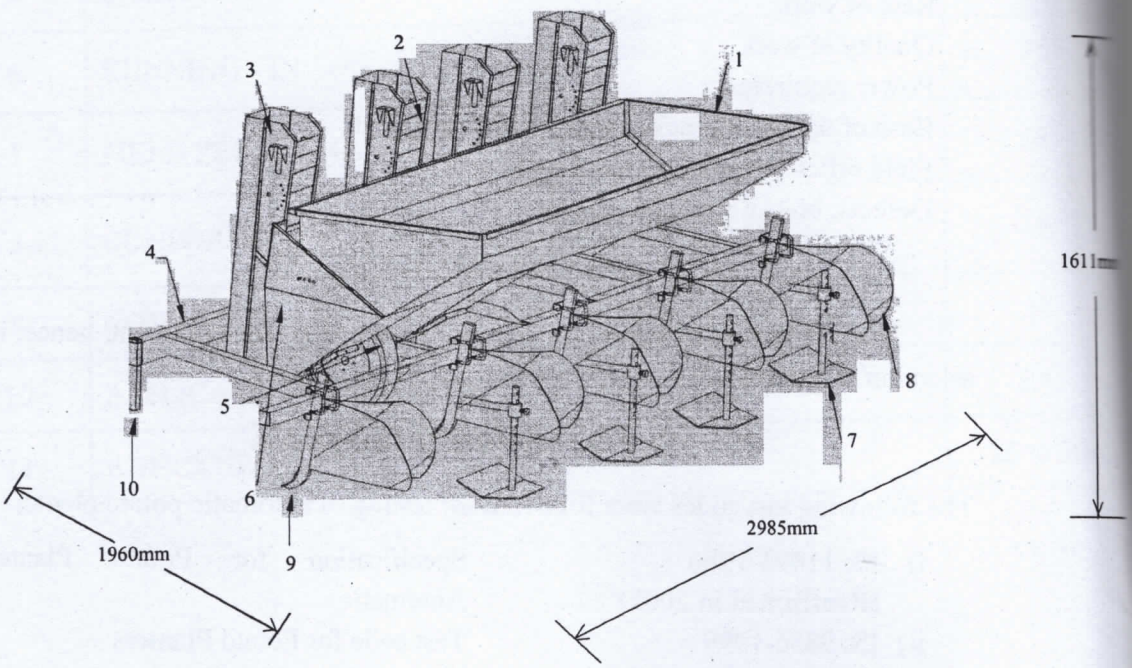

Fig.1: Schematic view of Automatic Potato Planter (NSE PP 4R)

KEY WORDS:

1	Upper hopper	6	Lower hopper
2	Upper roller assembly	7	Ridge compaction device
3	Roller arms	8	Ridger
4	Main frame	9.	Furrow opener
5	Ground wheel	10	Stand

8.8 Marking and Packing

9.1 Marking	Each planter should be marked with the following particulars with the standard make.		
	a. Manufacturer's name and trade mark, if any	Provided	Conforms
	b. Model, code and serial number	Not provided	**Does not conform**

9. COMMENTS & RECOMMENDATIONS

9.1 The dimensions of the three point linkage (hitch pyramid) of the planter do not conform to Ct. I & Cat. II to IS: 4468-2012. This should be looked into for corrective action for standardization.

9.2 The planter is not able to plant tuber with 200 mm soil cover as per performance requirement of the IS: 11893-1997. Hence, it is recommended to rectify the same at future production level.

9.3 Row spacing of the planter does not conform to relevant IS code, it should be adjustable ranging from 450 to 600 mm preferable in steps of 50 mm. Hence, this should be looked into for corrective action at production level.

9.4 The provision for adjustment of spacing of furrow openers were provided but, the entire metering mechanism was fixed. It is therefore, define that the provision of spacing adjustment is considered as fixed at 600 mm only.

9.5 The variation in dropping of seed from each chute was observed more than 5 percent from the average quantity obtained. This should be looked into for corrective action at future production level.

9.6 Planter is not provided with area recorder. It should be provided as per IS: 11893-1997.

9.7 The depth of operation was recorded as 9 to 12 cm in soil having 10 to 12 % moisture content which is found normal for planter operation.

9.8 The size of prime mover (tractor) as used for the test was found adequate. No over loading of the prime mover was noticed during the entire test.

9.9 The hourly rate of wear of shovel and ridger point on mass basis were recorded as 0.026 to 0.066% and 0.0152 to 0.041%, respectively.

9.10 Frequent loosening of ridge bolts were observed during testing. Hence, it is recommended to rectify the same at future production level.

9.11 The angle iron bar fabricated with the hitch pyramid from the frame, got cracked during transportation. Hence, it is recommended to strengthen the same at future production level.

9.12 There was no marking on the potato planter regarding nominal size, batch, code no. and size etc. except trade mark. Hence, it is recommended to be stamped, embossed or engraved on the metallic plate and rigidly fitted on a non wearing part.

9.13 Model, code and serial number were not marked with the planter. Hence, it is

10. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
10.1	9.1	We will implement the TPL design in line with IS: 4468-2012 to ensure the standardization.
10.2	9.2	We will enhance the soil cover up to 200 mm for future production.
10.3	9.3	We will study and check feasibility to increase the adjustment range from 450 to 600 mm.
10.4	9.4	We will take care of the same for future production.
10.5	9.5	We will implement the area recorder.
10.6	9.9	We will ensure the same for future production.
10.7	9.10	We will ensure the same for future production.
10.8	9.11	We will ensure the same for future production.