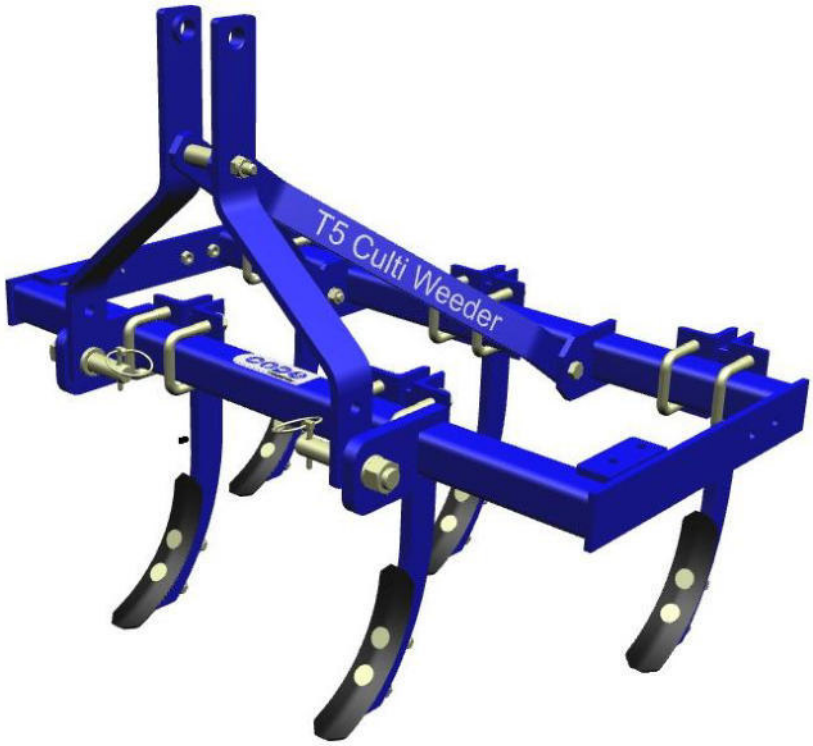
व्यावसायिक परीक्षण रिपोर्ट संख्या/ **No.: IMP- 1061/2987/2023**

COMMERCIAL TEST REPORT माह/**Month: April, 2023**

THIS TEST REPORT VALID UP TO : 30th April, 2030



SWARAJ T5, CULTIVATOR, RIGID TYPE (5 TINE) TRACTOR MOUNTED

सत्यमेव जयते

भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि एवं किसान कल्याण विभाग

Department of Agriculture and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर, सिरसा रोड, हिसार, (हरियाणा) - 125 001

Tractor Nagar, Sirsa Road, HISAR (Haryana)-125 001

[ISO 9001:2015 CERTIFIED]

Website: http://nrfmtti.gov.in/

E-mail: fmti-nr@nic.in Tele./FAX: 01662-276984

6. RUNNING – IN

The implement was run in for 1.0 hour before field performance test.

7. FIELD PERFORMANCE TEST

The field test of the implement was conducted for 27.48 hours in different soil moisture conditions to assess the performance of the implement.

The no load engine speed of prime mover was maintained as 2800 rpm and the observations are summarized in Table-3.

Table-3: Summary of field performance test

Sr. No.	Parameters	Observations
1.	Prime mover	CODE (Ride on self propelled multipurpose toolbar)
2.	Gear used	L-2
3.	Type of soil	Sandy Loam
4.	Soil moisture (%)	12.0 to 14.1
5.	Engine speed (rpm)	
	No load	2800
	On load	2620 to 2680
6.	Bulk density of soil (g/cc)	1.26 to 1.39
7.	Speed of operation (kmph)	2.21 to 2.28
8.	Depth of cut (cm)	8.93 to 9.60
9.	Width of operation (cm)	0.71 to 0.74
10.	Wheel slippage (%)	6.72 to 10.15
11.	Area covered (ha/h)	0.125 to 0.135
12.	Time required for one hactare (h)	7.41 to 7.96
13.	Field efficiency (%)	78.57 to 83.85
14.	Fuel consumption	
	l/h	1.67 to 1.91
	l/ha	12.54 to 14.62

7.1 Rate of work

- Averge rate of work in sandy loam was recorded as 0.125 to 0.135 ha/h at the forward speed of 2.21 to 2.28 kmph.
- Average time required to cover one hectare area was recorded as 7.41 to 7.96 hrs.

7.2 Quality of work

- Averge depth of operation was recorded as 8.93 to 9.60 cm.
- Average field efficiency was recorded as 78.57 to 83.85 %.

7.4 Wear analysis of shovel

7.4.1 On mass basis

Sr. No.	Initial mass (g)	Final mass (g)	Percentage of wear	
			After 28.48 hrs (%)	Per hour(%)
Front				
1.	426.63	413.50	13.13	0.46
2.	382.92	366.80	16.12	0.57
3.	388.74	377.80	10.44	0.38
4.	388.90	376.40	12.50	0.44
5.	390.00	376.50	13.50	0.47

11. SUMMARY OF OBSERVATIONS, COMMENTS AND RECOMMENDATIONS

11.1 The specification of implement hitch does not conform fully to the IS:4468 (Part1)-1997. It is recommended that the same should be provided conforming to the relevant Indian Standard.

11.2 The labelling plate should be provided with following information.

i) Make
ii) Model
iii) Serial number
iv) Year of manufacture
v) Size of implement
vi) Required size of prime mover (kW)
vii) Name and address of manufacturer
viii) Country of origin
ix) Weight

11.3 Rate of work

- Averge rate of work in sandy loam was recorded as 0.125 to 0.135 ha/h at the forward speed of 2.21 to 2.28 kmph.
- Average time required to cover one hectare area was recorded as 7.41 to 7.96 hrs.

11.4 Quality of work

- Averge depth of operation was recorded as 8.93 to 9.60 cm.
- Average field efficiency was recorded as 78.57 to 83.85 %.

11.5 Technical literature:

The following literature was supplied during test.

i) Opertor's manual
i) Service manual
ii) Part's catalogue

TESTING AUTHORITY

Er. SANJAY KUMAR **AGRICULTURAL ENGINEER**	
Dr. MUKESH JAIN **DIRECTOR**	17.04.2023

12. APPLICANT'S COMMENTS

Sr. No.	Our Reference	Applicant Comments
12.1	11.1 & 11.3	Necessary corrections as recommended by the institute would be incorporated in the specifications.
12.2	17.2	Necessary corrections as recommended by the institute would be incorporated in the labelling plate.