

व्यावसायिक परीक्षण रिपोर्ट  
COMMERCIAL TEST REPORT

संख्या/ No.: MTB - 06/2956/2022  
माह/Month: December, 2022

**THIS TEST REPORT VALID UP TO : 31<sup>st</sup> December, 2027**



**JYOTI ENGINEERING WORKS, JYOTI 3W  
RIDE ON SELF PROPELLED MULTI PURPOSE  
TOOL BAR (SANEDO)**



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

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5.	Phosphorous (P)	--	0.02	--
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### 15. RUNNING-IN

The Ride On Self Propelled Tool Bar was run-in for 1.00 hour before field performance test. All the fasteners were checked and tightened thereafter

### 16. FIELD TEST

The field performance test under dry land condition was conducted with cultivator attachment for 11.91 hours at no load 3000 rpm and with flat blade attachment for 14.17 hours at the no load 3000 rpm. In all, 5 tests trials were conducted in black soil at Moviya Gondal, Rajkot. The results of the field test for dry land operation is summarized in Table-8

#### Crop parameters

**Table 8: SUMMARY OF FIELD PERFORMANCE TEST**

Sr. No.	Parameter		T-5 cultivator	Flat blade
i)	Type of soil	:	Black	Black
ii)	Soil moisture, %	:	14.2 to 16.6	17.0 to 17.2
iii)	Bulk density of soil, g/cc	:	1.58 to 1.62	1.68 to 1.69
iv)	Speed of operation, kmph	:	4.55 to 5.11	5.12 to 5.18
v)	Depth of cut, cm	:	5.67 to 6.10	5.00 to 5.43
vi)	Width of cut, m	:	0.81 to 0.82	0.81 to 0.82
vii)	Area covered, ha/h	:	0.290 to 0.390	0.346 to 0.366
viii)	Time required for one ha	:	2.92 to 3.44	2.73 to 2.89
ix)	Fuel consumption			
		l/h :	0.80 to 0.90	0.80 to 0.90
		l/ha :	2.34 to 2.92	2.18 to 2.60
x)	Field efficiency, %	:	78.59 to 81.62	83.37 to 86.12
xi)	Draft, kg	:	19.68 to 26.21	9.69 to 14.28

#### 16.1 Field operation

##### 16.1.1 Rate of work

- Time required to cover 1 ha range from 2.92 to 3.44 h/ha for cultivator and 2.73 to 2.89 h/ha for flat blade.
- The average area covered was recorded as 0.290 to 0.390 ha/h for cultivator and 0.346 to 0.366 ha/h for flat blade.

##### 16.1.2 Quality of work

- The average depth of cut was recorded as 5.67 to 6.10 cm for cultivator and 5.00 to 5.43 cm for flat blade.
- The hourly fuel consumption was recorded as 0.80 to 0.90 l/h for cultivator and 0.80 to 0.90 l/h for flat blade and fuel required for 1 ha was recorded as 2.34 to 2.92 l/ha for cultivator and 2.18 to 2.60 l/ha for flat blade.





**18.7.2 Mass basis:**

The wear of the Flat blade was measured after 10.60 h. of field operation and the observations are as under:

Sl. No.	Initial mass (g)	Mass after 14.17 hrs. (g)	Loss of mass (g)	Percent wear (%)	Percent wear per hour
1	2620.00	2570.00	50.00	1.91	0.13

**19. COMMENTS & RECOMMENDATIONS****19.1 Mechanical vibration**

The amplitude of mechanical vibration marked as (\*) on the relevant chapter, are on drastically higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affect the useful life of the components. In view of above, this deserve to be given top priority for corrective action.

**19.2** The model of governor is not specified. It **MUST** be specified.

**19.3** Spark arresting devices is not provided. It **MUST** be provided.

**19.4** Valve guide and valve springs discard limit is not specified. It **MUST** be specified.

**19.5** Valve guide clearance discard limit is not specified. It **MUST** be specified.

**19.6 Field Test**

**19.6.1** Ride on self propelled multi-purpose tool bar was operated in varying field condition.

- The average depth of cut was recorded as 5.67 to 6.10 cm for cultivator and 5.00 to 5.43 cm for flat blade.
- The hourly fuel consumption was recorded as 0.80 to 0.90 l/h for cultivator and 0.80 to 0.90 l/h for flat blade and fuel required for 1 ha was recorded is 2.34 to 2.92 l/ha for cultivator and 2.18 to 2.60 l/ha for flat blade.
- Time required to cover 1 ha range from 2.92 to 3.44 h/ha for cultivator and 2.73 to 2.89 h/ha for flat blade.
- The average area covered was recorded as 0.290 to 0.390 ha/h for cultivator and 0.346 to 0.366 ha/h for flat blade.

**19.7** Overall, the performance was found to be satisfactory.




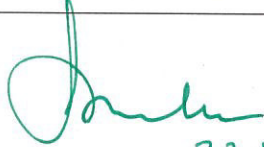
**20. TECHNICAL LITERATURE**

The following literatures were provided by the applicant during the test.

- a) Operator manual
- b) Parts catalogue
- c) Service manual

However, the manuals need to be updated as per IS: 8132-1999.

**TESTING AUTHORITY**

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 23.12.2022

Draft test report is compiled by Er. Dharmender Kumar, Technical Assistant

**21. APPLICANT'S COMMENTS**

Para No.	Our Reference	Applicant's Comments
21.1	19.1, 19.2, 19.3, 19.4 & 19.5	We will focus on improving all the points in future.

