

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट

संख्या/No. CSIR/CMERI/FMTTC/2024/039

INITIAL COMMERCIAL TEST REPORT

माह/Month: August, 2024

THIS TEST REPORT VALID UP TO

:

31<sup>st</sup> JULY, 2031



**SUN AGRO  
POWER WEEDER (MODEL: SA 9100DHE)**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र  
**Farm Machinery Training and Testing Centre**  
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**3 METHOD OF SELECTION**

The test sample was randomly selected. The applicant arranged 5 samples of SA 9100DHE samples of Power Weeder with same specifications. The weeders with following serial number were considered for random selection.

Sample No	Weeder Serial Number
1	2401000126
2	2401000127
3	2401000128
4	2401000129
5	2401000130 (Selected for Test)

**Table 1.** Samples for random selection**4 SPECIFICATIONS****4.1 General**

Type of machine	: Self-Propelled, Walk-Behind Type
Make	: SUN AGRO
Model	: SA 9100DHE
Serial No.	: 2401000130
Name and address of manufacturer	: SUN AGRO Adarsh Service Station, Supela, Bhilai, Chhattisgarh, Pin – 490020
Year of manufacture	: 2024
Country of origin	: India

**4.2 Details of prime mover**

Name and address of manufacturer	: SUN AGRO Adarsh Service Station, Supela, Bhilai, Chhattisgarh, Pin – 490020
Type	: Single Cylinder, Air Cooled, 4 Stroke, Vertical Shaft, Compression Ignition Engine
Make	: KAMA
Model	: KM 186FA
Sr. No.	: 230426 – 383
Country of origin	: China
Year of manufacture	: 2024
Engine speed (Manufacturer's recommended setting), (rpm)	:

Report verified by  
Subrata Kumar MandalReport prepared by  
Subrata Kumar Mandal

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**Table 4: Chemical analysis of rotary blade**

Elements	Requirement as per IS: 6690-1981 (%)	As observed (%)	Remarks
Carbon	0.50 to 0.60	0.439	<b>Does not Confirm</b>
Manganese	0.50 to 1.00	0.80	Conforms
Silicon	1.50 to 2.00	0.69	<b>Does not Confirm</b>
Phosphorous	0.05 (Max.)	0.022	Conforms
Sulphur	0.05 (Max.)	0.0095	Conforms

## 11 RUNNING IN

The Power weeder was run-in for one hour before field performance test as recommended by the applicant. All the fasteners were checked & tightened thereafter.

## 12 FIELD TEST

The field test under dry land condition was conducted for 21.55 h. The field performance tests were conducted at the rated 3600 rpm. Multiple test trials were conducted in sandy loam soil at the FMTTC, CSIR-CMERI farm, Durgapur. The results of the field test for dry land operation are summarized in Table-5.

### Crop parameters

- i) Type of weed :
- ii) Height of weed, cm :

**Table 5: Summary of field performance test**

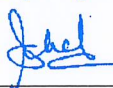
Sl. No.	Parameter	Range
I	Type of soil	: Sandy Loam
ii	Average Soil moisture (%)	: 12.3 to 19.3
iii	Average Bulk density of soil (g/cc)	: 1.50 to 1.71
iv	Average Speed of operation (kmph)	: 1.22 to 1.59
v	Average depth of cut (cm)	: 10.7 to 11.3
vi	Average Width of cut (m)	: 14.73 to 14.97
vii	Average Area covered (ha/h)	: 0.12 to 0.18
viii	Average Time required for one ha (Hr.)	: 5.6 to 8.1
ix	Average Fuel consumption	
	L/hr.	: 0.8 to 1.1
	L/ha	: 3.9 to 7.7
x	Average Weeding efficiency (%)	: 91 to 97.4
xi	Average Field efficiency (%)	: 63.9 to 86.3

The detailed field performance testing data is given in Annexure I.

## 13 ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIRS

No noticeable breakdown occurred during test.

**Report prepared by**



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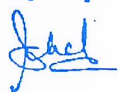
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24.	Provision for transport Wheels	Must be provided	Provided	Conforms
25.	Provision for cover on Exhaust	Must be provided	Provided	Conforms
26.	Direction of exhaust emission away from Operator	Must be provided	Provided	Conforms
27.	Marking/labeling machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer & Applicant, Country of origin, Make, Model, Year of manufacturer, Serial number, Engine number, Engine HP, rated rpm & SFC.	Provided	Conforms
28.	Literature	Operator manual, service manual and Parts catalogue should be provided.	Provided	Conforms

## 16 COMMENTS & RECOMMENDATION

- 16.1** The amplitude of mechanical vibration marked as (\*) under section 7, are on higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affects the useful life of the components. It needs to be corrected.
- 16.2** Material of the blade does not confirm as per IS Standard. It needs to be looked into.
- 16.3** Chemical analysis of the rotor blade does not comply with the requirement as per IS: 6690-1981. It should be looked into.
- 16.4** Material of rotor shaft does not confirm as per the requirement of BIS standards. It needs to be looked into.
- 16.5** The user manual and service manual are provided. But it needs to be updated as per IS standards.

**Report prepared by**



**Report verified by**



**17 TECHNICAL LITERATURE**

The following literatures are provided by the applicant during the test along with the application form.

- a) User's manual book
- b) Parts' catalogue
- c) Service manual

These manuals need to be provided as per IS: 8132-1999.

**TESTING AUTHORITY**

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	<i>Jeeb</i> 09/08/2024
Report Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	<i>Sudatekr Mansal</i> 09.08.2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	<i>Sudip Kumar</i> 09/8/24

**18 APPLICANT'S COMMENTS**

Para No.	Our Reference	Applicant's Comments
18	16.1 to 16.5	Noted, corrective actions will be taken against the given Comments & pRecommendations from 16.1 to 16.5

