

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट  
INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2024/073  
माह/Month: December, 2024

THIS TEST REPORT VALID UP TO : 30<sup>th</sup> NOVEMBER, 2031



**SAI AGRO EQUIPMENT  
POWER WEEDER (MODEL: SAI-900P)**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र  
**Farm Machinery Training and Testing Centre**  
सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान  
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### 3 METHOD OF SELECTION

The test sample was randomly selected. The applicant arranged 05 samples of SAI-900P Power Weeder with same specifications. The weeders with following serial number were considered for random selection.

Sample No	Serial Number of Weeder
1	1
2	2
3	3
4	4 (Selected for test)
5	5

*Fig 1. Random Selection of Power Weeder SAI 900P*

### 4 SPECIFICATIONS

#### 4.1 General

Type of machine	: Self-Propelled, Walk Behind Type
Make	: SAI Agro Equipment
Model	: SAI-900P
Serial No.	: 23111300269
Name and address of manufacturer	: M/s. SAI Agro Equipment, AT/PO: Swampatna, Dist.: Keonjhar, Odissa, PIN-758030
Year of manufacture	: 2023
Country of origin	: India

#### 4.2 Details of prime mover

Name and address of manufacturer	: M/s. SAI Agro Equipment, AT/PO: Swampatna, Dist.: Keonjhar, Odissa, PIN-758030
Type	: Single Cylinder, Air Cooled, 4 Stroke, OHV, Spark Ignition Engine.
Make	: SAI Agro
Model	: YBT 177F
Sr. No.	: 23110914593
Country of origin	: India
Year of manufacture	: 2024
Engine speed (Manufacturer's recommended setting), (rpm)	
High idle speed	: 4050
Low idle speed	: 2600
Rated speed, (rpm)	: 3400
No load engine speed for field	: 3400

Report verified by  
Subrata Kumar Mandal

Report prepared by  
Subrata Kumar Mandal

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**Table 3: Chemical analysis of rotary blade**

Elements	Requirement as per IS: 6690-1981 (%)	As observed (%)	Remarks
Carbon	0.50 to 0.60	0.65	<b>Does not Confirm</b>
Manganese	0.50 to 1.00	1.16	<b>Does not Confirm</b>
Silicon	1.50 to 2.00	0.26	<b>Does not Confirm</b>
Phosphorous	0.05 (Max.)	0.029	Conforms
Sulphur	0.05 (Max.)	0.018	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 16.35 hrs. 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-4.

**Crop parameters:**

- i) Type of weed : Seasonal Grass
- ii) Height of weed, cm : 0.2 to 5

**Table 4: 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)	: 1.52 to 1.71
iv	Average Speed of operation (kmph)	: 1.22 to 1.59
v	Average depth of cut (cm)	: 10.67 to 11.27
vi	Average Width of cut (cm)	: 147.3 to 149.7
vii	Average Area covered (ha/h)	: 0.11 to 0.20
viii	Average Time required for one ha (Hr.)	: 4.92 to 8.88
ix	Average Fuel consumption	
	L/hr.	: 0.83 to 1.16
	L/ha	: 4.76 to 10.32
x	Average Weeding efficiency (%)	: 95.1 to 98.7
xi	Average Field efficiency (%)	: 60.9 to 87.4

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

*[Signature]*

Report verified by

*[Signature]*

<b>Farm Machinery Training and Testing Centre, CSIR-Central Mechanical Engineering Research Institute, Durgapur THIS REPORT IS VALID UPTO: 30<sup>th</sup> November, 2031</b>	18 of 24
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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** Material of the rotor shaft does not confirm as per IS Standard. It needs to be looked into.
- 16.4** Chemical analysis of the rotor blade does not confirm with the requirement as per IS: 6690-1981. It should be looked into.
- 16.5** Provision for handle Rotation is not provided in the machine. It needs to be provided.

Report prepared by



Report verified by  


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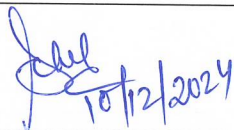
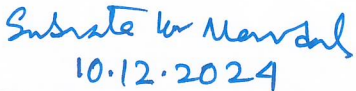
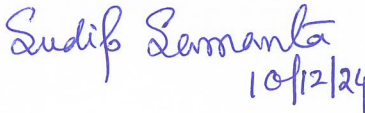
### 17 TECHNICAL LITERATURE

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 are need to be updated as per IS: 8132-1999.

### TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	 10/12/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	 10.12.2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	 10/12/24

### 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 & Recommendations from 16.1 to 16.5

