

**THIS TEST REPORT IS VALID UPTO 30.04.2031**



**RALO, ES6R SELF PROPELLED  
WALK BEHIND RICE TRANSPLANTER**



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

दक्षिणी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Southern Region Farm Machinery Training and Testing Institute

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Machine- 562/1613	<b>RALO, ES6R SELF PROPELLED WALK BEHIND RICE TRANSPLANTER</b>	<b>COMMERCIAL (ICT)</b>
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Manufacturer, (apa) : M/s World New (Huzhou)Industrial Co.,  
Ltd No. 1881,2<sup>nd</sup> Ring West Road  
Huzhou City Zhejiang Province, **China**

Applicant : M/s. Ralo Agro Genetic 4-53/4E/14/A,  
Old SBI Street, Beside Bus Stand,  
Station, Ghanpur, Dist: Jangaon-506143,  
Telangana.

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WALK BEHIND RICE TRANSPLANTER**

Report No.: **Machine-562/1613**

Month: **May**

Year: **2024**



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Machine-  
562/1613

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BEHIND RICE TRANSPLANTER**

**COMMERCIAL  
(ICT)**

**THIS TEST REPORT IS VALID UPTO 30.04.2031**

Type of test : COMMERCIAL (ICT)  
Period of test : January, 2024 to March, 2024  
Test Report No. : **Machine-562/1613**  
Month / Year of release : May, 2024

- i) The results reported in this report are observed values and no corrections have been applied for atmospheric and site conditions.
- ii) The data given in this report pertain to the particular machine randomly selected by testing authority.
- iii) The results presented in this report do not in any way attribute to the durability of the machine.
- iv) This report should not be reproduced in part or full without prior permission of the Director, Southern Region Farm Machinery Training and Testing Institute, Garladinne, Anantapur (A.P.).
- v) This is a report on Commercial Test of Rice Transplanter named "**RALO, ES6R SELF PROPELLED WALK BEHIND RICE TRANSPLANTER.** This report is valid up to 30.04.2031, Vide Ministry's O.M. No. 13-22/2020-M&T (I&P) dated 12.12.2023.

**SELECTED CONVERSIONS**

S. No	Units	Conversion Factor
1	<b>Force</b>	
	1 kgf	9.80665 N 2.20462 lbf
2	<b>Power</b>	
	1 hp	1.01387 metric hp (Ps) 745.7 W
	1 Ps	735.5 W
	1 kW	1.35962 Ps
3	<b>Pressure</b>	
	1 psi	6.895 kPa
	1 kgf/cm <sup>2</sup>	98.067 kPa = 735.56 mm of Hg
	1 bar	100 kPa = 10 N/cm <sup>2</sup>
	1 mm of Hg	1.3332 m-bar



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**Valves, guides and timing gears: Observation**

Any marked sign of overheating of valves	:	None
Pitting of seat/faces of valves	:	None
Any visual damage to the teeth of timing gears	:	None
Clearance between valve guide and valve stem (mm)		
- Intake valve	:	0.06
- Exhaust valve	:	0.07

**15.2 Transmission gears:**

All the gears of the transmission system were found in normal working condition.

**15.3 Rotary drive unit:**

The rotary drive unit was dismantled and all the components were found in normal working condition.

**16. SUMMARY OF OBSERVATIONS, COMMENTS AND RECOMMENDATIONS**

**16.1 Engine Performance:**

16.1.1 The maximum power was observed as 3.25 PW under natural ambient condition against the declared value of 3.5 kW.

16.1.2 Specific fuel consumption of engine corresponding to maximum power recorded as 443 g/kWh against the declared value of 260 g/kWh.

16.1.3 Max. torque was observed as 9.84 Nm against the declared value of 12 Nm.

16.1.4 Back up torque of engine was observed as 8.6 %.

**16.2 Mechanical vibration:**

The amplitude of mechanical vibration on various assemblies of the transplanter was observed to the extent of 1242 micron, which is on higher side. In view of the above, this should be given top priority for corrective action.

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**16.3** The labeling plate does not reveal all the required information. It is therefore recommended that a suitable labeling plate covering all essential components, inter alia, the following must be provided:

- i. Address of manufacturer
- ii. Make
- iii. Country of origin
- iv. Specific fuel consumption (g/kWh)

**16.4 Field Test**

The transplanter was operated in varying field conditions for a total period of 26.0 hours for transplanting JGL-24423 variety of paddy seedlings. The results are summarized as under: -

- Av. forward speed of operation was observed as 2.64 to 2.68 kmph.
- Av. area covered was recorded as 0.336 to 0.348 ha/h.
- Av. depth of transplanting was recorded as 4.20 to 4.65 cm.
- The spacing between rows was recorded as 30 cm.
- Av. number of plants per hill was recorded as 6.1 to 7.0.
- Av. spacing between hills was recorded as 17.5 to 17.7 cm.
- Av. total number of hills in 5 m row length was recorded as 17.7 to 28.
- Av. number of hills per sq. m. was recorded as 24.
- Av. percentage of missed hills was recorded as Nil to 1.37.
- Av. percentage of floating seedlings was recorded as Nil to 1.37.
- Av. percentage of buried seedlings was recorded as Nil to 1.37.
- Av. percentages of damaged seedling were recorded as Nil to 1.37.
- The total percentage of transplanting faults was recorded as Nil to 1.37.
- The consumption of nursery trays was recorded as 244 to 274 numbers per hectare.
- The hourly fuel consumption was recorded as 1.13 to 1.19 l and fuel required for planting of one hectare area was recorded as 3.20 to 3.51 l.

**16.4.1** The quality of work was observed as smooth during entire transplanting operation. The overall performance of the machine was found satisfactory.

**16.5 Components/assembly inspection**





**16.5.1** The transplanter and engine were dismantled after 37.33 hours of operation and wear of critical components were observed within the limits.



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- 16.5.2** The main gear box, planting box, planting arm drive mechanism and bearings were dismantled after completion of field operation and found in satisfactory working condition.
- 16.6 Safety provisions**  
The machine is provided with various safety provisions while working in the field or moving on the road as mentioned in the **clause 5.10** of this test report.
- 16.7 Technical literature:**  
Operator's manual, service manual and parts catalogue of Rice Transplanter and engine in separate booklet were supplied with the Rice Transplanter for reference during the test. It is however, recommended that same may be revised in Hindi and other regional languages as per IS 8132: 1999 (Reaffirmed 2004) for the sake of user & technical personnel.

**TESTING AUTHORITY**

 <b>Er. PRAMOD YADAV</b> AGRICULTURAL ENGINEER	 <b>Er. P.KAMALABAI</b> SENIOR AGRICULTURAL ENGINEER
	 <b>Dr. B.M. NANDEDE</b> DIRECTOR

**17. APPLICANTS COMMENTS**

We will do the recommended all -corrective action on future lot.