

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट

संख्या/No. CSIR/CMERI/FMTTC/2024/026

INITIAL COMMERCIAL TEST REPORT

माह/Month: June, 2024

THIS TEST REPORT VALID UP TO

:

31ST MAY, 2031



**AL-BURHAN INTERNATIONAL
BATTERY OPERATED KNAPSACK SPRAYER
(12AH GOLD)**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र
Farm Machinery Training and Testing Centre
सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान
CSIR - Central Mechanical Engineering Research Institute
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Manufacturer : Al Burhan International
16 B R B Basu Road
1st Floor, Kolkata - 700001

Test requested by : Applicant

Selected for test by : CSIR-CMERI

Method of selection :

The test sample was randomly selected by Video call. The applicant arranged 10 samples of RAJA 12AH GOLD Battery Operated Knapsack Sprayer with same specifications. The sprayers with following serial number were considered for random selection.

Sample No.	Sprayer Serial No.
1	001
2	002
3	003 (Selected for Test)
4	004
5	005
6	006
7	007
8	008
9	009
10	010

Table 1. Samples for Random Selection

1. SPECIFICATIONS

1.1 General

Type : Battery Sprayer

Make : RAJA

Model : 12 AH GOLD

Serial No. :

Name of manufacturer : Al Burhan International
16 B R B Basu Road
1st Floor, Kolkata - 700001

Year of manufacture : 2024

Capacity of sprayer, l : 16

Working pressure, kg/cm² : 1 to 7

1.2 Motor (As per Sticker)

Type : D C Motor

No. of Motor : 01

Make : RAJA

Serial number : C23/09D

Motor operating voltage : 12 V, DC

Motor power : 48 Watt

Max. Current : 4 A

Rated speed, rpm : 3100

Report verified by
Subrata Kumar MandalReport prepared by
Subrata Kumar Mandal

11. ENDURANCE TEST OF SPRAYER
(Vide clause 8.8 of IS-11313:2007)

1. Date of test: 25.04.2024 to 03.05.2024
2. Total running time (h) - 50
3. Quantity of liquid collected during endurance: -
Avg. discharge (ml/min)
 - a) First Collection - 2295
 - b) Second Collection - 2285
 - c) Third Collection - 2290
 - d) Fourth collection - 2285
 - e) Fifth Collection - 2290
 - f) Sixth Collection - 2285
 - g) Seventh Collection - 2290
4. Percentage variation of discharge from first to last collection, 0.22 %

12. TEST FOR PUMP CHAMBER
(Vide Clause 7.1 of IS 10134-1994)

Date of test : 06.05.2024

Sr. No.	Details	Condition
1	Test Condition	Outlet end closed
2	Pressure applied -Hydraulic pressure -Pneumatic pressure	Motor stopped beyond 6.2 kg/cm ² pressure against the pressure requirement of 7.5 kg/cm ² . 4.5 kg/cm ²
3	Duration	1 minutes each
4	Result	No leakage, crack deformation or breakage observed in pump chamber during the test.

Remarks : Tendency of stalling of motor was observed beyond 6.2 kg/cm² hydraulic pressure and therefore sprayer does not confirm to the requirement laid down in clause 7.1 of IS: 10134:1994.

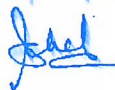
13. TEST FOR HOSE AND HOSE CONNECTION
(Vide Clause 5.14.3 of IS 11313:2007 & Clause 7.2 of IS 10134-1994)

Date of test : 06.05.2024

Sr. No.	Details	Condition
1	Test condition	Outlet end closed
2	Hydraulic pressure applied	1.5 MPa
3	Duration	1 minutes
4	Result	No leakage, crack or breakage observed in hose and hose connection during the test.

17. COMMENTS & RECOMMENDATIONS

- 17.1 The model & country of origin of pump is not specified. It should be specified.
- 17.2 The material used for pump inlet port end fitting does not meet the requirements of Indian standard. It must be looked into.
- 17.3 The spray lance is not marked and designated. It must be marked and designated as per standard.
- 17.4 The model & country of origin of battery charger is not specified. It should be specified.
- 17.5 The nozzle is not marked and designated. It should be marked and designated as per standard.
- 17.6 The cut off device is not marked and designated. It should be marked and designated as Per standard.
- 17.7 During the pump chamber hydraulic test, the motor stopped beyond 6.2 kg/cm² pressure against the pressure requirement of 7.5 kg/cm². Thus the sprayer does not meet the requirement of Indian Standard.
- 17.8 The length of the nipple of discharge outlet of the pump does not meet the requirement of Indian standard. It must be looked into.
- 17.9 The size of the strap cushion does not meet the requirements of Indian standard. It must be looked into.
- 17.10 The average size of apertures of the strainer in cut off device does not meet the requirements of Indian standard. It must be looked into.
- 17.11 Time required to full charge the battery with AC charger is observed as 6 hrs. to 6 hrs. 10 mins.
- 17.12 The spraying operation time after fully charging the battery was observed as 4 hrs. 10 min. to 4 hrs. 15 min.

Report prepared by**Report verified by**

18. TECHNICAL LITERATURE

The operator, maintenance & parts manual of sprayer was provided during the test which found adequate, however, the manual should be updated as per IS: 8132:1999, with the inclusion of safety instructions regarding handling poisonous agrochemical and first aid.

TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	<i>[Signature]</i> 25/06/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	<i>[Signature]</i> 25.06.2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	<i>[Signature]</i> 25/6/24

19. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
19	17.1 to 17.12	Please be informed that from our side we have already told our manufacturing division to take immediate necessary action to comply with all the suggested parameters.

