

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट

INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2024/015

माह/Month: May, 2024

THIS TEST REPORT VALID UP TO : 31<sup>ST</sup> MAY, 2031



**BALWAAN BS-22D  
BATTERY OPERATED KNAPSACK SPRAYER**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र  
**Farm Machinery Training and Testing Centre**  
सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान  
**CSIR - Central Mechanical Engineering Research Institute**  
महात्मा गांधी एवेन्यू, दुर्गापुर  
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**Name & Address of Applicant** : Modish Tractor Aurkisan Pvt. Ltd.  
C-17, Purohit Ji Ka Bas, Road No – 1,  
MSME Office, 22 Godam Industrial Area,  
Jaipur – 302006.

**Name & Address of Manufacturer** : Modish Tractor Aurkisan Pvt. Ltd.  
17-C Sharma Colony, Extension. 22, Godam  
Industrial Area, Jaipur – 302006, Rajasthan

**Type** : Knapsack Sprayer (Battery Operated)

**Make** : Balwaan Krishi

**Model** : BS-22 D

**Test Conducted at** : Farm Machinery Training and Testing Centre  
CSIR- Central Mechanical Engineering Research  
Institute, M G Avenue, Durgapur, Pin – 713209,  
West Bengal.

**THIS TEST REPORT IS VALID UP TO: 31<sup>st</sup> MAY, 2031**  
[vide DAC&FW OM No. 13-22/2020- M&T (I&P) dated 12.12.2023]



Report No.: CSIR/CMERI/FMTTC/2024/015    Month: May    Year: 2024

**CSIR - Central Mechanical Engineering Research Institute,  
Durgapur - 713209  
(W.B.), INDIA**

**Report prepared by**

**Report verified by**

Manufacturer : Modish Tractor Aurkisan Pvt. Ltd.  
17-C Sharma Colony, Extension. 22, Godam  
Industrial Area, Jaipur – 302006, Rajasthan

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 BALWAAN BS-22D BATTERY OPERATED 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
4	004 (Selected for Test)
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 Operated Knapsack Sprayer

Make : BALWAAN KRISHI

Model : BS-22D

Serial No. : 004

Name of manufacturer : Modish Tractor Aurkisan Pvt. Ltd.  
17-C Sharma Colony, Extension. 22, Godam  
Industrial Area, Jaipur – 302006, Rajasthan

Year of manufacture : 2024

Capacity of sprayer, l : 20

Working pressure, kg/cm<sup>2</sup> :

### 1.2 Motor (As per Sticker)

Type : D C Motor

No. of Motor : 02

Make : BALWAAN KRISHI

Serial number : **Not Specified**

Motor operating voltage : 12 V, DC

Motor power : 48-78 Watt

Max. Current : 4-6.5 A

Rated speed, rpm : 2800



## 17. COMMENTS &amp; RECOMMENDATIONS

- 17.1 The Serial number of motor is not specified. It should be specified.
- 17.2 The mode, serial number & country of origin of pump is not specified. It should be specified.
- 17.3 The material used for pump inlet port end fitting does not meet the requirements of Indian standard. It must be looked into.
- 17.4 The spray lance is not marked and designated. It must be marked and designated as per standard.
- 17.5 The length of the telescopic lance from sealing face to sealing face does not meet the requirement of Indian standard. It must be looked into.
- 17.6 The material used for end fittings of the spray lance does not meet the requirements of Indian standard. It must be looked into.
- 17.7 The nozzle is not marked and designated. It should be marked and designated as per standard.
- 17.8 The cut off device is not marked and designated. It should be marked and designated as Per standard.
- 17.9 During the pump chamber hydraulic test, the motor stopped beyond  $7.2 \text{ kg/cm}^2$  pressure against the pressure requirement of  $7.5 \text{ kg/cm}^2$ . Thus the sprayer does not meet the requirement of Indian Standard.
- 17.10 The tank capacity does not meet the requirement of Indian standard. It must be looked into.
- 17.11 The size of the strap cushion does not meet the requirements of Indian standard. It must be looked into.
- 17.12 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.

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>J. S. S.</i> 24/05/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	<i>Sudipto Kumar Mondal</i> 24/05/2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	<i>Sudip Samanta</i> 24/5/24

## 19. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
19	17.1 – 17.12	It's ok and corrective action will be taken.

