

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट

**INITIAL COMMERCIAL TEST REPORT**

THIS TEST REPORT VALID UP TO

:

संख्या/No. CSIR/CMERI/FMTTC/2024/014

माह/Month: May, 2024

31<sup>ST</sup> MAY, 2031



**BALWAAN BS-20  
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

**Mahatma Gandhi Avenue, Durgapur**

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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-20

**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/2024/014    Month: May    Year: 2024

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

**Report prepared by**

**Report verified by**  
*Subrata kr Mandal*

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-20 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 (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 Operated Knapsack Sprayer

Make : BALWAAN KRISHI

Model : BS-20

Serial No. : 003

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 : 18

Working pressure, kg/cm<sup>2</sup> : 1 to 4

### 1.2 Motor (As per Sticker)

Type : D C Motor

No. of Motor : 01

Make : BALWAAN KRISHI

Serial number : **Not Specified**

Motor operating voltage : 12 V, DC

Motor power : 36 Watt

Max. Current : 3 A

Rated speed, rpm : 2800

**Report prepared by**

*[Signature]*

**Report verified by**  
*Subrata kr Mandal*



**17. COMMENTS & 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 5.2 kg/cm<sup>2</sup> pressure against the pressure requirement of 7.5 kg/cm<sup>2</sup>. 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**  
Subrata Kr Mandal

## 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> 24/05/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	<i>[Signature]</i> 24/05/2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	<i>[Signature]</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.

