प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट
**INITIAL COMMERCIAL TEST REPORT**

संख्या/No. CSIR/CMERI/FMTTC/2025/008
माह/Month: February, 2025

**THIS TEST REPORT VALID UP TO : 31st JANUARY, 2032**

# BALWAAN BS-16M
# MANUALLY OPERATED KNAPSACK SPRAYER

सत्यमेव जयते
Goverment Of India


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**
पश्चिम बंगाल - **713209**
**West Bengal - 713209**
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| | | |
|---|---|---|
| **Name & Address of Applicant** | : | Modish Tractor Aurkisan Pvt. Ltd.<br>C-17 Sharma Colony Ext. 22 Godam, Jaipur,<br>(Rajasthan) |
| **Name & Address of Manufacturer** | : | Modish Tractor Aurkisan Pvt. Ltd.<br>C-17 Sharma Colony Ext. 22 Godam, Jaipur,<br>(Rajasthan) |
| **Type** | : | Knapsack Sprayer (Manually Operated) |
| **Make** | : | Balwaan Krishi |
| **Model** | : | BS-16M |
| **Test Conducted at** | : | Farm Machinery Training and Testing Centre<br>CSIR- Central Mechanical Engineering Research Institute, M G Avenue, Durgapur, Pin – 713209, West Bengal. |

**THIS TEST REPORT IS VALID UP TO: 31st JANUARY, 2032**

[vide DAC&FW OM No. 13-22/2020- M&T (I&P) dated 12.12.2023]

सत्यमेव जयते
Goverment Of India

**Report No.: CSIR/CMERI/FMTTC/2025/008 Month: February Year: 2025**

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

Report prepared by

Report verified by

## 2. SPECIFICATIONS

| | | | |
|---|---|---|---|
| **1.1** | **General** | | |
| | Type | : | Manual Operated Knapsack Sprayer |
| | Make | : | Balwaan Krishi |
| | Model | : | BS-16M |
| | Brand | : | Balwaan Krishi |
| | Name of manufacturer | : | Modish Tractor Aurkisan Pvt. Ltd.<br>C-17 Sharma Colony Ext. 22 Godam, Jaipur, (Rajasthan) |
| | Year of manufacture | : | 2024-01 |
| | Capacity of sprayer, (l) | : | 16 |
| | Working pressure, kg/cm$^2$ * | : | 1 to 3.5 |
| **1.2** | **Chemical Tank** | | |
| | Material of construction | : | Plastic |
| | Size (mm) | : | 390 x 310 x 125 |
| | Capacity (l) | : | 16 |
| **1.3** | **Agitating Device** | : | N. A |
| **1.4** | **Nozzle** | | |
| | Type of nozzle | : | "Y" Type Double Nozzle," Y" Type Single Nozzle, 5 Holes Flower & 4 Holes Hollow Cone type |
| | Nozzle designation | : | **Not specified** |
| | Number of nozzle | : | Four types |
| **1.5** | **Accessories (for operator's safety against pesticides)** | : | Mask, hand gloves and goggles provided. |
| **1.6** | **Overall Dimensions, mm** | | |
| | Height | : | 585 |
| | Width | : | 195 |
| | Length | : | 475 |
| **1.6.1** | **Mass with all accessories and chemical tank, kg** | : | 2.04 |
| **1.6.2** | **Mass with accessories and chemical tank full, kg** | : | 18.09 |
| **1.7** | **Identification/Labelling plate** | : | The following is printed on the body of the chemical tank |

One sticker is also pasted on the body of the Chemical Tank:

Report prepared by

Report verified by
Subrata Kr Mandal

## 16 COMMENTS & RECOMMENDATIONS

16.1 The spray lance is not marked and designated. It must be marked and designated as per standard.

16.2 The nozzle is not marked and designated. It should be marked and designated as per standard.

16.3 The cut off device is not marked and designated. It should be marked and designated as Per standard.

16.4 The size of the strap cushion does not meet the requirements of Indian standard. It must be looked into.

16.5 The material used for spray lance does not meet the requirements of Indian standard. It must be looked into.

16.6 The average size of the strainer in cut off device does not meet the requirements of Indian standard. It must be looked into.

16.7 The minimum discharge rate of the pump does not meet the requirements of Indian standard. It must be looked into.

16.8 The height of the straight portion of the piston does not meet the requirements of Indian standard. It must be looked into.

16.9 User manual is not provided. It should be provided.

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## 17 TECHNICAL LITERATURE

The operator, maintenance & parts manual of sprayer was not 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,<br>CSIR-CMERI Farm<br>Machinery Testing Centre | 10/02/2025 |
| Report Verified & Approved by | In-Charge,<br>CSIR-CMERI Farm<br>Machinery Testing Centre | Subrata Kr Mandal<br>10/2/2025 |
| Report Approved for release by | Head, Business Development Unit,<br>CSIR-CMERI, Durgapur | S Mandal<br>12/2/25 |

## 18 APPLICANT'S COMMENTS

| Para No. | Our Reference | Applicant's Comments |
|---|---|---|
| 18 | 16.1 to 16.9 | It's ok corrective action will be taken. |

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FARM MACHINERY TRAINING AND TESTING CENTRE * CSIR-CMERI DURGAPUR