

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट
INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2022/007
माह/Month: SEPTEMBER, 2022

THIS TEST REPORT VALID UP TO : 30th September, 2029



**ASPEE PSB50A1N/SBDGS
ENGINE OPERATED POWER SPRAYER**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र
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CSIR/CMERI/FMTTC/2022/007	ASPEE PSB50A1N/SBDGS ENGINE OPERATED POWER SPRAYER (INITIAL COMMERCIAL TEST)
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Manufacturer : ASPEE Agro Equipment Pvt. Ltd.
 Opp. Gram Panchayat office, Chikhli Road,
 Antalia Village, Bilimora-396321, Ta-Gandevi,
 Dist-Navsari, GUJARAT
 Test requested by : The applicant
 Selected for test by : The applicant
 Method of selection : The sprayer is directly submitted by the applicant
 for the test. Hence, method of selection is not
 known.

1. SPECIFICATIONS

1.1 General

Name of Machine : ASPEE Bili HTP Power sprayer
 Type : HTP Hydraulic Power sprayer pump
 Make : ASPEE
 Model : PSB50A1N/SBDGS
 Brand : ASPEE
 Serial No. : C/53065
 Output capacity li/min : 50 lit./min
 Name of manufacturer : ASPEE Agro Equipment Pvt. Ltd.
 Opp. Gram Panchayat office, Chikhli Road,
 Antalia Village, Bilimora-396321, Ta-Gandevi,
 Dist-Navsari, GUJARAT
 Year of manufacture : December-2021
 Working pressure, kg/cm² : 21 (300psi)

1.2 Recommended Source of Power : Engine

1.3 Prime Mover

Type : Single Cylinder, 4 Stroke, Petrol Engine
 Make : Honda
 Model : GX200
 Power rating, kW* : 4.1 kW @ 3600 RPM
 Max. torque, Nm* : 12.4 Nm @ 2500 RPM
 Engine Sr. No. : GCAFD-1025379*QTP
 Country of origin : China

1.3.1 Cylinder

Number : 1
 Disposition : Inclined
 Bore / Stroke, mm* : 68 / 54
 Capacity, c.c.* : 196
 Compression ratio* : 8.5:1

*As declared by the applicant

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

1. Date of Test : 11.07.2022 to 22.07.2022
2. Total running hours : 50
3. Quantity of liquid collected during endurance: -

SL No	Collection Time	Avg Discharge, ml/min
1	First Collection	52100
2	Second Collection	51900
3	Third Collection	50550
4	Fourth Collection	51900
5	Fifth Collection	52725
6	Sixth collection	50970
7	Seventh Collection	51005

4. **Percentage variation of discharge from first to last collection, was observed to be 2.1% which is within limit of $\pm 5\%$ as per relevant standard.**

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 :		
Sr. No.	Details	Condition
1	Test Condition	Hose outlet end closed
2	Hydraulic pressure applied	1.5 MPa
3	Duration of pressure	1 Minute
4	Result	No Leak, Crack or Breakage observed in hose and hose connection during the test.

14. ASSESSMENT OF CONSTRUCTIONAL REQUIREMENTS

14.1	GENERAL REQUIREMENTS		
Ref. Cl. No.	Specified requirements as per Indian Standard IS: 11313-2007	Observation	Remarks
Cl. 5.1	The tank, if provided, its capacity shall be not less than 100 liters the tank capacity shall be declared by the manufacturer.	Not applicable for portable power sprayer.	NA
Cl.5.1.1	The tank when filled up to its total capacity, the tank shall not show any sign of leakage and shall not buckle.	Not applicable for this design.	NA
Cl. 5.2 Filling Hole	A filling hole of suitable diameter shall be provided on top of the tank.	Not applicable for this design.	NA

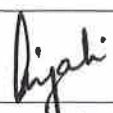

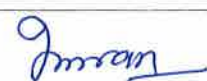
18. COMMENTS AND RECOMMENDATIONS

- 18.1 The spray angle of the spray gun at a pressure of 600 ± 60 kPa for extreme adjustment of fine cone spray pattern is not declared by the manufacturer. However the applicant has declared 100° angle at recommended operating pressure of 200 PSI (1379kPa). But the measured value of angle is 83° . It does not conform the relevant standard. It MUST be looked into.
- 18.2 The discharge rate of the spray gun for extreme adjustment for fine cone spray and jet spray patterns at a pressure of $600 \text{ kPa} \pm 60 \text{ kPa}$ is not declared by the manufacturer. However the observed discharge rate for fine cone spray pattern and jet spray pattern is within limit specified by the relevant Code/ Standards for declared value of the applicant at the recommended operating pressure i.e. 200 PSI (1379kPa). It MUST be looked into.
- 18.3 A pressure gauge up to 120 bar is provided. The indicator full scale reading exceeds 2.5 times of rated pressure i.e. 52.5 kg/cm^2 which does not conform IS: 11313-2007. It MUST be looked into.
- 18.4 The identification mark of spray gun is provided as 1008000 10000JET at working pressure of 200 PSI. The applicant need to declare at 600 kPa as per standard. It should be looked into.
- 18.5 The discharge rate and angle of nozzle at 300 kPa is not declared but at declared at 200 psi (1379 kPa). It should be looked into.
- 18.6 Identification mark of spray nozzle is not given at 300 kPa but provided at working pressure of 200 PSI of the nozzle as 1008000 10000JET. It should be looked into.
- 18.7 The suction strainer aperture size is $525 \mu\text{m}$ which should be less than $425 \mu\text{m}$. It MUST be looked into.
- 18.8 Country of origin of pump is not specified. It should be specified.

19. 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

Dr. ANJALI CHATTERJEE Chief Scientist	
Dr. SUBRATA KUMAR MANDAL Senior Principal Scientist	
Md. IMRAN SHEKH Senior Scientist	

20. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
18	18.1 & 18.2	Noted, We will declare spray angle and discharge rate at 600 kPa.
	18.3	A pressure gauge we are providing as per customer requirement, we will provide as per customer requirement.
	18.4, 18.5 and 18.6	We will do needful
	18.7	Noted, we will amend
	18.8	Noted, We will specify