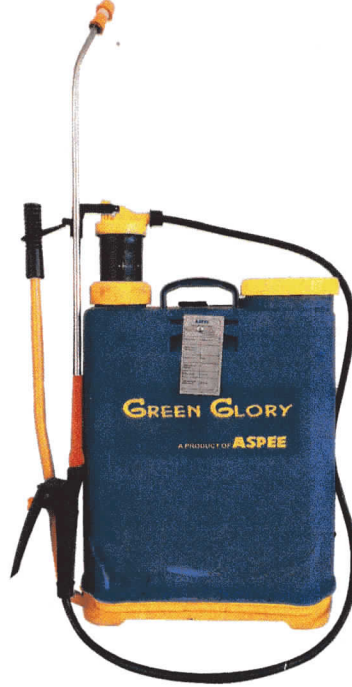


ब्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: PS-443/2560/2020
माह/Month: October, 2020

THIS TEST REPORT VALID UP TO : 31st OCTOBER, 2025



**ASPEE, GG-16 ASPEE GREEN GLORY
HAND OPERATED KNAPSACK SPRAYER**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

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[ISO 9001:2015 CERTIFIED]

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4. TEST FOR DISCHARGE RATE
(Vide Clause 6.1.3 of IS 10134-1994)

1. Date of test : 19.10.2020
2. Atmospheric conditions :
 - a) Temperature : 33.6 °C
 - b) Relative humidity : 34.2 %
3. Pressure : 98.3 kPa
4. Data recorded

No. of hand strokes per minute	Pressure (kPa)	Test No.	Delivery from the discharge line (ml/min)	Overflow (ml/min)	Average delivery from the discharge line (ml/min)	Discharge rate of pump (ml/min)
16	300	1.	560	NIL	545.0	545.0
16	300	2.	540	NIL		
16	300	3.	550	NIL		
16	300	4.	530	NIL		

Average discharge rate: 545.0 ml/min at 300 kPa pressure

5. TEST FOR VOLUMETRIC EFFICIENCY
(Vide Clause 6.2 of IS 10134-1994)

Sl. No.	Date of test	:	19.10.2020
Sl. No.	Details	:	Observation
1.	Discharge of water in 10 successive stroke	:	325 ml
2.	No of cycle in one minute	:	10
3.	Actual volume of water in one cycle	:	32.5 ml
4.	Inner diameter of pump cylinder	:	40 mm
5.	Stroke length at normal working pressure	:	35 mm
6.	Piston displacement	:	43.96 cc
7.	Theoretical volume of water in one cycle	:	43.96 ml
8.	Volumetric efficiency, %	:	73.9 %

Remarks - The volumetric efficiency of pump does not conform to the requirement of IS: 10134-1994.

6. TEST FOR SPRAY LANCE
(Vide Annex. D of IS: 3652-1995)

Date of test : 16.10.2020
Type : Gooseneck (Type- B₁)

6.1 STRENGTH OF SPRAY LANCE

Sr. No	Details	Condition
1	Test Condition	Outlet closed
2	Hydraulic pressure applied	1 MPa
3	Duration of pressure retained	5 minutes
4	Result	No leak, crack, or burst of lance was observed during test

6.2 MARKING ON SPRAY LANCE

Manufacturer's name or recognized trade mark : Marked as Aspee
Nominal length, mm : Marked as 60 cm

**7. TEST FOR CUT-OFF DEVICE
(Vide Annex C Clause 6.8.3 of IS:3652 : 1995)**

Date : 16.10.2020
Type : Trigger type (Type - A)

7.1 MAXIMUM TRIGGER ACTUATION TORQUE

Required torque	:	Less than 35 kgf-cm
Observed torque	:	25.4 kgf-cm

7.2 STRENGTH TEST FOR CUT-OFF DEVICE

Sr. No	Details	Condition
1	Condition of outlet	Closed
2	Hydraulic pressure	750 kPa
3	Duration of pressure retained	5 Minute
4	Observation	No drip or leak of cut off device through valve was observed during test.

7.3 LEAKAGE AND RELIABILITY TEST FOR CUT-OFF DEVICE

Sr. No	Details	Condition
1	Test Condition	Mounted on test setup
2	Hydraulic pressure retained	300 kPa
3	Operating cycles	5000 cycles at pressure 300 kPa and repeated for 500 cycles at a pressure of 600 kPa @ approx.15 cycles per minutes
4	Observation	No drop or leak of cut off device through valve was observed during test.

7.4 MARKING ON CUT-OFF DEVICE

- a) Manufacturer's name or recognized trade mark : Marked as Aspee
b) Batch or code number : Marked as TCP/BN

**8. TEST FOR PRESSURE CHAMBER
(Vide Clause 7.1 of IS 10134-1994)**

Date of test : 20.10.2020

Sr. No	Details	Condition
1	Test Condition	Outlet end closed
2	Pressure applied -Hydraulic pressure -Pneumatic pressure	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 pressure chamber during the test.

12. TEST FOR NOZZLE
[Vide Annex F of IS: 3652-1995]

Type of Nozzle : Solid cone Type

12.1 TEST FOR DISCHARGE RATE OF NOZZLE

The discharge rate of nozzle at a pressure of 300 kPa has been declared by applicant as 450 ml/min for fine cone spray pattern. The discharge rate corresponding to 300 kPa pressure was observed as under:-

- For fine cone spray pattern : 515 ml/min

Remarks: Discharge rate for fine cone spray pattern was observed not within the limit specified by the relevant Indian standard.

12.2 TEST FOR SPRAY ANGLE OF NOZZLE

The spray angle of nozzle at a pressure of 300 kPa has been declared by applicant as 80 degree. The spray angle corresponding to 300 kPa pressure was observed as 63.2 degree.

Remarks: The observed spray angle for fine cone spray pattern at the pressure of 300 kpa was observed not within the limit specified by the relevant Indian standard.

12.3 ENDURANCE TEST OF NOZZLE

- i) Date : 09.10.2020 to 14.10.2020
 ii) Total running time (h) : 48
 iii) Quantity of liquid collected and spray angle observed during endurance test.

Sr. No.	No. of collection	Avg. discharge ml/min	Spray angle, degree
a)	First collection	510.0	62.4
b)	Second collection	530.0	63.2
c)	Third collection	512.5	62.0
d)	Fourth collection	517.5	61.6
e)	Fifth collection	515.0	63.5
f)	Sixth collection	522.5	62.8
g)	Seventh collection	520.0	61.2
h)	Eighth collection	515.0	63.2

Remarks : i) Percentage variation in discharge rate from first to last collection, 0.98 %.

ii) Percentage variation in spray angle from first to last collection, 1.28 %.

12.4 SPRAY DISTRIBUTION PATTERN OF NOZZLE

The liquid discharge from nozzle at 300 kPa pressure was collected in glass tubes of patternator. The spray pattern as per the quantity of liquid collected is represented in tabular form and in Fig. 1.

12.5 NOZZLE DESIGNATION (apa) : AN80C450 J

Provision for strainer in nozzle : Provided

12.6 MARKING OF NOZZLE

Manufacturer's name or recognized trade mark : Marked as Aspee

Batch or code number : Marked as XLC/N

Nozzle designation : Not Marked

17. COMMENTS & RECOMMENDATIONS

- 17.1 The serial number of pump is not specified. It should be specified.
- 17.2 Agitator is not provided in the sprayer. It **MUST** be provided
- 17.3 The back rest cushion is not provided. It may be provided.
- 17.4 The pump volumetric efficiency does not meet the requirement of Indian Standard. It **MUST** be looked into.
- 17.5 The strap cushion is not provided. It may be provided.
- 17.6 During the strap drop test the buckle/bracket of strap assembly found failed to hold the strap in its position. It should be improved.
- 17.7 No necessary tools are provided this sprayer. It **MUST** be provided.
- 17.8 The discharge rate of nozzle for fine cone spray pattern at the pressure of 300 kpa was observed not within limit specified by the relevant Indian standard. It **MUST** be looked into.
- 17.9 The spray angle for fine cone spray pattern at the pressure of 300 kpa was observed not within limit specified by the relevant Indian standard. It **MUST** be looked into.
- 17.10 The spray nozzle is not designated marked. It **MUST** be looked into.
- 17.11 The leakage was observed through in connection during the hose and hose connection test. It **MUST** be looked into for necessary action.
- 17.12 The angle of bent portion of lance does not meet the requirement of Indian standard. It **MUST** be looked into.
- 17.13 The average aperture size of strainer of cut off device does not meet the requirement of Indian standard. It **MUST** be looked into.




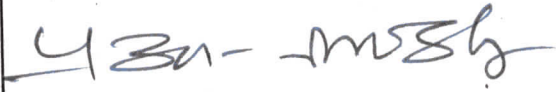
18. TECHNICAL LITERATURE

The following literature provided with sprayer for guidance to the user.

i) Instruction manual

However, the manual of sprayer needs to be updated as per IS : 8132 -1999

TESTING AUTHORITY

MAAN SINGH SENIOR TECHNICAL ASSISTANT	
P. K. PANDEY DIRECTOR	

19. APPLICANT'S COMMENTS

Para No.	Our reference	Applicant's Comments
19.1	17.2	As per IS 3906-1995, Cl. 7.3.3 Agitator, Agitator may be provided. As per Cl. 7.3- it is optional item.
19.2	17.3	As per IS 3906-1995, Cl. 7.3.2 Back rest cushion, A back rest cushion may be provided. As per Cl. 7.3- It is optional item.
19.3	17.4, 17.8, & 17.9	Noted, we will do needful in regular production.
19.4	17.5	As per 3906-1995, Cl. 7.3.1 Strap cushion, Strap cushion may be provided. As per Cl. 7.3. It is optional item.
19.5	17.6	Noted, we will improve.
19.6	17.7	It is tool free equipment.
19.7	17.11, 17.12 & 17.13	Noted, We will improve.

