COMMERCIAL TEST REPORT

HAND OPERATED KNAPSACK SPRAYER
KISAN KRAFT, KK-12L

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE & FARMERS WELFARE
DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE

NORTHERN REGION FARM MACHINERY TRAINING AND TESTING INSTITUTE
TRACTOR NAGAR, SIRSA ROAD, HISAR-125001 (HARYANA)
D-5 MARKING | The lance shall be marked with the following particulars:
---|---
a) Manufacturer’s name or recognized trade-mark | Not marked | Does not conform
b) Nominal length, and | Not marked | Does not conform
c) Batch or code number | Not marked | Does not conform

6.14 Nozzle | Unless otherwise specified by the purchaser, the nozzle shall conform to the requirement as given in Annexure-F of IS: 3652-1995.

ANNEXURE F, HYDRAULIC SPRAY NOZZLES (CL 6.8.4 OF IS 3652:1995)

| F-1 Types | On the basis of spray distribution the nozzles shall be of the following types:
| --- | --- |
| F-1.1 | a) Hollow cone type
| | b) Fan type
| | c) Adjustable type
| | i) Double action type
| | ii) Triple action type.

| F-1.2 | On the basis of the method of attachment, the nozzles shall be of the following types:
| --- | --- |
| | a) Fixed type
| b) Swivel type

| F-3 PERFORMANCE REQUIREMENTS | Rate of discharge | 500 to 800 ml/min declared in the manual submitted by the manufacturer.
| --- | --- |
| F-3.1 Rate of discharge | The discharge rate of the nozzle shall be declared by the manufacturer. In case of adjustable nozzle, the declared value shall be for extreme adjustments for cone and jet spray patterns at a pressure of 300 kPa.
| F-3.1.2 | When tested in accordance with F-7, The nozzles shall provide a rate of discharge as given in Table-3. The rate of discharge shall be within ±5 percent for fixed type and ±10 percent for adjustable type of nozzle, of the declared value.

| F-3.2 Spray Angle | The spray angle of the nozzle shall be declared by the manufacturer. The angle, when tested in accordance with method given in F-9 shall not differ by ±3 deg. for fixed type and ±5 deg. for adjustable type nozzles from the declared value.
| F-3.3 Endurance test | The hydraulic spray nozzle when tested in accordance with F-7 and F-9 at a pressure of 300 ± 30 kPa after operating for 48 hour duration with continuous stretches of 6h, variation in discharge rate and spray angle from initial values should not be more than ±5 percent and ±3 deg. respectively.

Endurance test of spray nozzle completed and variation in discharge and spray angle is 2.71% and 0.82% respectively.
### Cl. 9

**Marking & Packing**

Each sprayer shall be marked with the following particulars

<table>
<thead>
<tr>
<th>a) Manufacturer's name or recognized trade mark</th>
<th>Marked, Kisan Kraft KK-12 Liters</th>
<th>Does not conform</th>
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<tbody>
<tr>
<td>b) Batch or Serial No.</td>
<td>Not marked</td>
<td>Does not conform</td>
</tr>
<tr>
<td>c) Tank nominal capacity</td>
<td>12 ltr.</td>
<td>Conforms</td>
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#### Cl. 9.3

**IS:3906-1995**

Each sprayer shall be packed as agreed to between the purchase and the supplier for safe handling in transit.

### 5. COMMENTS & RECOMMENDATIONS:

#### 5.1 Conformity to Indian Standard

Kisan Kraft KK-12L hand operated knapsack sprayer does not conform to the following requirements specified in Indian Standard. **These should be rectified as per relevant Indian Standard.**

- **i)** Cl. 6.1 IS: 3906:1995-Chamical tank capacity is not as per Indian Standard.
- **ii)** Cl. 6.5 IS: 3652:1995-Threaded connections does not conform to IS.
- **iii)** Cl. 6.13 Sub clause C-10, IS: 3906:1995- Cut-off device is not marked as per Indian Standard.
- **iv)** Cl. 6.8.3 Sub Clause D-3, IS: 3652:1995-Thickness of tube wall is not conforms.
- **v)** Cl. 6.8.3 Sub Clause D5, IS: 3652:1995-The lance is not marked as per IS.
- **vi)** Cl. 6.14 Sub. Clause F5 (b), IS:3652:1995-Nozzle designation is not provided.
- **vii)** Cl. 6.14 Sub. Clause F (a), 11 (b) & (c) IS: 3652:1995-Nozzle marking is not provided.
- **viii)** Cl. 7.3.2 IS: 3906:1995-The back rest cushion is not provided.
- **ix)** Cl. 7.3.3 IS: 3906:1995-Agitator is not provided.
- **x)** Cl. 9 IS: 3906-1995-Serial number of sprayer is not specified on sprayer. Each sprayer may be provided with its serial number on it and marked as per Clause 9.

#### 5.2 Spray distribution pattern is complying triangular distribution limit as per IS:3652:1995.

#### 5.3 The details of manufacturer's & country of origin is not provided on packing product as well as in literature. It may be provided.

#### 5.4 Safety provisions/safety wear

- **i)** The accessories viz mask, hand gloves and safety goggles for operator's safety are provided with sprayer,
ii) Safety signs and hazard pictorials are not provided on the machine. It must be provided on the machine for safety of user.

iii) The safety instructions regarding handling of poisonous chemicals & first aid must be provided in operator’s manual for safety of user.

6. **TECHNICAL LITERATURE:**
   Operation manual of KK-12L sprayer is provided are provided by the applicant for reference during test. The operator’s manual, service manual and spare parts catalogue should be updated and brought out as per IS: 8132-1999. The literature may be brought out in Hindi and other regional languages for the user.

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**TESTING AUTHORITY**

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<thead>
<tr>
<th>R. K. NEMA</th>
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<td>SENIOR AGRICULTURAL ENGINEER</td>
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<td>DIRECTOR</td>
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7. **APPLICANT’S COMMENTS**

We agree to all comments & recommendations.
We will improve in it at the production level.