# KNAPSACK SPRAYER: ROUTINE OPERATOR CHECKLIST

**GENERAL**

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>O.K.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean</td>
<td>☐</td>
</tr>
<tr>
<td>No apparent damage</td>
<td>☐</td>
</tr>
<tr>
<td>Strap fixing points secure</td>
<td>☐</td>
</tr>
</tbody>
</table>

**FILL WITH WATER**

- Will straps take weight? ☐
- Is sprayer stable when filled? ☐

**LEAKAGE CHECK**

- Check for leaks, upright and on side ☐

**FUNCTION CHECK**

- Check pressure relief valve to max. limit ☐
- Spray Out - Is cut-off valve working? ☐
- Is spray pattern correct? ☐
- Is nozzle undamaged? ☐
- Is nozzle flow rate within 10% of manufacturer’s stated output? ☐

**INTERNAL RESIDUE**

- Spray out until fan collapses and air appears ☐
- Is remaining liquid less than cupful? ☐

**FOLLOWING USE**

- Rinse with detergent ☐
- Rinse twice with water - flush out through lance ☐
- Clean nozzle and all filters in water with soft brush ☐
- Clean outside of tank and straps ☐
- Follow disposal procedure for rinsings ☐

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**MAKE SURE NO LIQUIDS ENTER ANY DRAINS**

Developed by NSTS and the Crop Protection Association as part of the Voluntary Initiative

### Calibration: Standard Method

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
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</table>
| **Read the LABEL** | Spray VOLUME  
Product Dose  
Spray QUALITY |
| **Select NOZZLE** | Refer to product label |
| **Set PRESSURE** | Adjust pressure relief valve to appropriate position if fitted or use a pressure control valve  
“LO” |
| **Measure TIME per 100 metres** | Determine time in seconds taken to spray over 100 metres. Wear full protective clothing and work on similar ground of that to be sprayed. Do this at least twice and take the average |
| **Measure WIDTH** | Spray over a dry surface at consistent height. Measure width of sprayed band in metres. |
| **Measure nozzle OUTPUT** | Spray into a bucket for the TIME in seconds per 100 metres. Decant into a calibrated container to measure output in millilitres (cc). Or measure quantity of water needed to replace the drop in the tank volume. Do this at least twice and take the average |
| **Calculate spray VOLUME** | VOLUME = OUTPUT ÷ WIDTH ÷ 100  
ml/sq.metre  millilitres  metres  
VOLUME = OUTPUT ÷ WIDTH ÷ 10  
litre/hectare  millilitres  metres |

#### Example

<table>
<thead>
<tr>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 litres/hectare</td>
</tr>
<tr>
<td>5.5 litres/hectare</td>
</tr>
</tbody>
</table>

#### If the spray volume is not within ± 15% of the label recommendation, make small adjustments in speed or pressure and repeat the above steps. If these are not sufficient then change the nozzles and recalibrate.

### Now, calculate the dose required for your sprayer tank:

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| **DOSE RATE** | Read the product dose label to get the dose rate for the job in hand  
5.5 litres/ha |
| **TANK CAPACITY** | Find out the capacity of the tank, or the quantity of spray mixture if less than a full tank  
20 litres |
| **Calculate amount of PRODUCT per tank** | PRODUCT = DOSE x TANK ÷ VOLUME  
litre/tank  l/ha  litres  litres/hectare  
5.5 x 20  ÷ 206  
= 0.53 litres  
plus 19.47 litres water |

**All details must be entered in records**

We are grateful to the BCPC for permission to reproduce the calibration method from the BCPC Hand-Held & Amenity Sprayers handbook.