



## KNAPSACK SPRAYER: ROUTINE OPERATOR CHECKLIST

### GENERAL

O.K.

#### CONDITION

- Clean
- No apparent damage
- Strap fixing points secure

#### **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 5%  
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





## Calibration: Standard Method

## Example

|                                    |  |  |
|------------------------------------|--|--|
| <b>Read the LABEL</b>              | Spray VOLUME<br>Product Dose<br>Spray QUALITY  | 200 litres/hectare<br>5.5 litres/hectare<br>Medium   |
| <b>Select NOZZLE</b>               | Refer to product label   | D / 2.5 / 1<br>Deflector   |
| <b>Set PRESSURE</b>                | Adjust pressure relief valve to appropriate position if fitted or use a pressure control valve   | "LO"   |
| <b>Measure TIME per 100 metres</b> | 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  | 95 seconds   |
| <b>Measure WIDTH</b>               | Spray over a dry surface at consistent height. Measure width of sprayed band in metres.  | 1.7 metres   |
| <b>Measure nozzle OUTPUT</b>       | 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. | 3500 ml<br>in 95seconds<br>(ie. 3.50 litres)   |
| <b>Calculate spray VOLUME</b>      | $VOLUME = OUTPUT \div WIDTH \div 100$<br>ml/sq.metre    millilitres    metres<br>$VOLUME = OUTPUT \div WIDTH \div 10$<br>litre/hectare    millilitres    metres  | $3500 \div 1.7 \div 100$<br>$= 20.6 \text{ml/sq.metre}$<br>$3500 \div 1.7 \div 10$<br>$= 206 \text{litre/hectare}$ |

If the spray volume is not within  $\pm 15\%$  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:

|   |   |  |
|---|---|--|
| <b>DOSE RATE</b>                            | Read the product dose label to get the dose rate for the job in hand                          | 5.5 litres/ha  |
| <b>TANK CAPACITY</b>                        | Find out the capacity of the tank, or the quantity of spray mixture if less than a full tank. | 20 litres  |
| <b>Calculate amount of PRODUCT per tank</b> | $PRODUCT = DOSE \times TANK \div VOLUME$<br>litre/tank    l/ha    litres    litres/hectare    | $5.5 \times 20 \div 206$<br>$= 0.53 \text{ litres}$<br>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