### BOOMSPRAY CALIBRATION WORKSHEET

**What item of equipment are you calibrating?** .................................................................

**Area to be sprayed** ......................... ha  
**Chemical:** ........................................

**Situation (pest/host):** ........................................................................................................

### Part A - Recording: Refer to the manufacturers’ charts and the chemical label.

<table>
<thead>
<tr>
<th>Step</th>
<th>Instructions</th>
<th>Details</th>
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</table>
| 1    | What is the **Minimum Desired Water Application Rate**?  
*Note: This may be expressed as a range.* (From the chemical label) | L/ha |
| 2    | Select appropriate **Chemical Rate** from the label. | L/ha |
| 3    | Select a **Ground Speed** to suit spraying conditions.  
(It must be realistic for the particular paddock conditions) | km/hr  
Gear  
rpm |
| 4    | Record the **Nozzle Type and Size** in the spray unit. Check the rated “water output” using the manufacturer’s nozzle chart. |  
Type:  
Size:  
Rated output: ml/min |
| 5    | Select and set **Spray Operating Pressure** (use the manufacturer’s nozzle chart as a guide) | kpa  
or  
bar |
| 6    | **Tank size** | litres |
| 7    | Select **Minimum Boom Height** above target for these nozzles. | cm |

### Part B - Calculating actual water application rate and quantity of chemical required per tank.

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<th>Instructions</th>
<th>Essential Measurements</th>
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| 8    | Record **Output** (ml) from every Nozzle for 1 Minute | **Total Spray Output**  
*Add all nozzles, after worn and blocked nozzles have been replaced, and convert to litres per minute (divide total output by 1000)* |
| 9    | Record actual **Effective Spray Width** (The distance across the outside nozzles plus the distance between two adjacent nozzles). | **Effective Spray Width** m |
| 10   | **Actual Ground Speed**  
= Distance travelled (m) × 3.6 ÷ Time taken (sec)  
= ( ) × 3.6 ÷ ( ) = kph | **Actual Ground Speed** kph |

**Notes**

* Determine **actual ground speed** by measuring a set distance, say 100 metres, under similar conditions to the area to be sprayed and timing how long it takes using the pre-determined gears and revs, with boomspray tank half full of water.

**Check that the calculated Water Application Rate (on next page) is equal to, or greater than, the Minimum Desired Water Application Rate (from the label).**
To calculate how much chemical to put into the tank

**8 TOTAL SPRAY OUTPUT**

(..................) litres/min

**9 EFFECTIVE SPRAY WIDTH**

(..................) metres

**10 ACTUAL GROUND SPEED**

(..................) kph

**WATER APPLICATION RATE**

\[
\text{Water application rate} = \frac{\text{Total output (litres/min) } \times 600}{\text{Spray width (m) } \times \text{Ground speed (km/hr)}} = \frac{(\phantom{0}) \times 600}{(\phantom{0}) \times (\phantom{0})} = \phantom{0} \text{l/ha}
\]

**OR (Using the calculator)**

\[
\text{Water application rate} = \frac{(\phantom{0}) \times 600}{(\phantom{0}) \times (\phantom{0})} = \phantom{0} \text{l/ha}
\]

**2 CHEMICAL RATE**

................. litres/ha

**6 CAPACITY OF TANK**

(VOLUME OF WATER IN THE TANK) = .............. litres

**HOW MUCH CHEMICAL TO PUT IN THE TANK**

\[
\text{Volume of chemical} = \frac{\text{Chemical rate (l/ha)} \times \text{Volume of water in tank (litres)}}{\text{Water application rate (l/ha)}} = \frac{(\phantom{0}) \times (\phantom{0})}{(\phantom{0})} = \phantom{0} \text{litres/tank}
\]

**OR (Using the calculator)**

\[
\text{Volume of chemical} = \frac{(\phantom{0}) \times (\phantom{0})}{(\phantom{0})} = \phantom{0} \text{litres/tank}
\]

**HOW MANY TANK LOADS ARE NEEDED FOR THE JOB?**

\[
\text{Total spray mix volume required} = \text{Area to be sprayed (ha)} \times \text{Water application rate (l/ha)} = (\phantom{0}) \times (\phantom{0}) = \phantom{0} \text{litres}
\]

\[
\text{Number of tanks} = \frac{\text{Total spray mix volume required (litres)}}{\text{Capacity of spray tank (litres)}} = \phantom{0} \text{tanks}
\]

**OR (Using the calculator)**

\[
\text{Number of tanks} = \frac{(\phantom{0})}{(\phantom{0})} = \phantom{0} \text{tanks}
\]

(To cross-check your calculations: \(\text{Number of tanks} \times \text{Volume of chemical per tank} = \text{Area to be sprayed} \times \text{Chemical rate}\))

\[
\text{Number of tanks} \times \text{Volume of chemical per tank} = \phantom{0} \times \phantom{0} = \phantom{0}
\]

\[
\text{Area to be sprayed} \times \text{Chemical rate} = \phantom{0} \times \phantom{0} = \phantom{0}
\]