

Fact Sheet

Herbicide Spray Calibration



Tom's Creek
Landcare

Key Methods



Spot spraying

Most effective for individual plants, margins, or small infestations. Use a coloured dye to avoid double-treating or missing plants.



Wick wiping

Blanket treatment by wiping herbicide onto tall ALG plants that sit above desirable pasture. Requires a height difference.



Boom spraying

Blanket treatment best for large, dense infestations. Must be accompanied by subsequent pasture renovation and oversowing.



Drone spraying

While more expensive than traditional methods, it does provide the ability for accurate pre-spray infestation mapping.

Overview

Effective chemical control of any weed relies on selecting the right herbicide, and applying it accurately. Whether you are spot spraying isolated plants or boom spraying a large infestation, correct calibration ensures you apply the dose required to kill the weed without wasting expensive herbicides or causing unnecessary off-target damage.

Understanding the environmental conditions required for the selected herbicide to be most effective is critical - consider the season, proximity to rain, and daily wind forecasts.

Before using herbicides it's important to understand the risks and limitations of their application. Some herbicides are strictly controlled and carry penalties for off-label use. You should always follow the label directions, and if you are unsure consult an agronomist.

Choosing an Application Method

Method	Best used for...	Key considerations
Spot Spray	Isolated plants or small clusters, and areas with limited vehicle access.	Use a colored dye to track treated plants and avoid double-spraying.
Wick wiping	Sparsely occurring mature plants that sit above pasture height.	Does not prevent new seedlings and must be followed by additional management.
Boom spray	Large, dense infestations in areas with good vehicle access.	Place out stakes or GPS markers to avoid misses or overlaps.
Drone spray	Large inaccessible infestations or areas that require accurate mapping.	Can be significantly more expensive than traditional application methods.

Spot Spray

Equipment needed

- Spray unit
- Clean water
- Tape measure
- Measuring jug
- Herbicide to be applied

Step-by-step instructions

Step 1: Measure your flow

Put water in the unit and record how long it takes to spray 1 litre into a measuring jug.

Step 2: Practice your pace

Mark out a 5m by 2m area (10m²). Practice spraying this area in the time it took to fill the 1L jug, achieving even coverage over the entire area. This sets a rate of 1L per 10m²

Step 3: Calculate the mix

Look up the recommended spray rate per hectare on the herbicide label. Divide by 1000 to calculate the amount of herbicide needed per litre of water, then multiply by the number of litres in your water tank.

Example:

Flupropanate application at 2L/ha mixed in a 50L spray tank:

$$\frac{2L}{1000} = 2mL \text{ chemical per } L \text{ water}$$

$$2mL \times 50L = 100mL \text{ chemical}$$

In a 50L tank, add 100ml of herbicide to 49.9L of water to achieve a 2L/ha application rate.

Note: It is important to maintain a consistent pace to ensure even coverage. For herbicides like Flupropanate, it is important to avoid overapplication to prevent 'brown-out'. Conversely, under-application can lead to ineffective die-off and herbicide resistance.

Boom Spray

Equipment needed

- Spray unit
- Clean water
- Tape measure
- Measuring jug
- Herbicide to be applied

Step-by-step instructions

Step 1: Measure output

Run the sprayer with water at your intended pressure. Catch the output of one nozzle in a measuring jug for one minute. Multiply this by the number of nozzles to get the total output in litres per minute (L/min).

Step 2: Determine effective spray width

Measure the distance between two nozzles and multiply by the total number of nozzles.

Step 3: Calculate actual ground speed

Mark out 100m in the paddock. Time how long it takes to drive it at a realistic speed.

$$\text{Speed (km/h)} = \frac{360}{\text{Time (seconds for 100m)}}$$

Step 4: Calculate application rate

The mix application rate in litres per hectare (L/ha) can be calculated using the below formula.

$$\text{Rate (L/ha)} = \frac{600 \times \text{Total output (L)}}{\text{Speed (km/h)} \times \text{Effective width (m)}}$$

Step 5: Calculate total mix required

Multiply the application rate in L/ha by the total number of hectares to be treated. This is the total mix required to treat the affected area.

$$\text{Area(ha)} \times \text{Rate (L/ha)} = \text{Total litres}$$

