



# Target 100% Weed Control - Fallow Spraying in Stubble

INFO SHEET

This Info Sheet is provided as part of the Sinochem 'Target 100% Weed Control' campaign, to assist growers target 100% weed control.

In crop stubble, spray coverage will often be compromised and growers need to be attentive to every detail of the spray application to ensure the highest possible weed control.

Growers who focus on using the best herbicide formulations available, coupled with correct sprayer set-up, sprayer operation, actual spray coverage, product application rate and favourable environmental conditions will have the greatest chance of reaching 100% weed control, leading to cleaner crops, less herbicide resistance and higher yield potential.

## KEY POINTS

- The biggest loss of herbicide efficacy in stubble situations is interception of the spray droplets by the standing stubble.
- There are three keys to ensuring effective weed control in stubble: sprayer set-up, sprayer operation and using the best herbicide formulation at the correct rate.
- The target weed (e.g. grass vs. broadleaf, age) determines what droplet size, water rate and product rate should be used to fallow spray in stubble.
- Confirm sufficient coverage for adequate weed control using water sensitive paper.

## Glyphosate Application in Stubble

### WATER VOLUME AND SPRAY QUALITY

Water volume and spray quality choices depend on the target weed. The industry standard Area Fraction Coverage is 8-10% and 20-30 droplets/cm<sup>2</sup>.

Table 1 below gives the spray quality and water volume requirements for translocated modes of action (i.e. glyphosate) to achieve this standard across different weed types. Stubble load also plays a factor. Where large stubble loads are present, use higher water and product rates to compensate for interception. Using larger droplets also requires higher water volumes for deposition onto smaller targets.

**Table 1: Spray quality and water volume requirements for glyphosate\***

Spray Quality	Small Grass	Tillered Annual Ryegrass	Summer Broadleaf Weeds
Medium	70-100 litres/ha <sup>^</sup>	70-100 litres/ha <sup>^</sup>	Not recommended
Coarse	70-100 litres/ha <sup>^</sup>	70-100 litres/ha <sup>^</sup>	50-100 litres/ha <sup>^</sup>
Very Coarse	Not recommended	-	50-100 litres/ha <sup>^</sup>

\*Some products might prescribe specific application specifications that differ from this table. Please check the Directions for use table of the product you intend to use.

<sup>^</sup>Use the higher water volume and product rates in situations where large stubble loads are present to compensate for interception.



### TIMING AND PRODUCT RATE

Very small grass weeds will always be difficult to control in thick stubbles and require high product rates and water volumes. Alternatively, delaying control results in loss of moisture and nutrients, potentially leading to larger, stressed 'harder to control' weeds. Getting the timing right becomes a balance between spraying small weeds at lower rates or large weeds with robust rates.

### NOZZLE SELECTION AND BOOM SPRAY SET-UP

Nozzle types can influence spray quality, and therefore weed coverage significantly. Correct sprayer-setup depends on the spraying system, nozzle type, water volume, working speeds, drift requirements, topography, stubble loads and meteorological conditions.

Ideally sprayer height should operate at 50cm above the target weeds or the top of false targets (i.e stubble).

### ENVIRONMENTAL CONDITIONS

Spray conditions are crucial when targeting 100% weed control. A useful tool for determining optimal spray conditions is Delta T. A low Delta T may increase the chance of drift, and a high Delta T can lead to high droplet losses from evaporation, both resulting in poor efficacy. Ideal conditions are when Delta T is between 2 and 10. Aim to spray when wind speeds are 3-15 km/h to reduce chances of spray drift.

### TRAVEL SPEED



There are limitations to good application and efficacy with high ground speeds. Travel speed and water volume have the greatest impact on achieving good coverage. With increased speeds, generally greater than 20km/hr, and especially above 25km/hr, there will be fewer droplets retained on targets (refer to Figure 1). Higher working speeds also result in increased dust in wheel tracks and losses to the environment leading to poor efficacy.

Spraying with larger droplets and faster speeds will increase the interception on one side of plants. Shadowing will be accentuated behind stubbles and boom height will need to be increased. GPS guidance along with sowing and spray 'up and back', has produced a secondary benefit of minimising stubble interception and better inter-row weed control.

© This work is copyright. Apart from any use permitted under the Copyright Act 1968, no part may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of Farmanco Management Consultants Pty Ltd.

